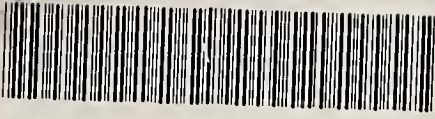



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# Annual Report

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**Division of Forests and Parks**

**Fiscal Year 1985**

**Massachusetts Department of Environmental Management**



B U R E A U   R E P O R T S

BUREAU OF RECREATION -

CHARLES H. DANE, CHIEF

BUREAU OF FOREST DEVELOPMENT -

THOMAS F. QUINK, CHIEF

BUREAU OF INSECT PEST CONTROL -

CHARLES S. HOOD, CHIEF SUPERINTENDENT

BUREAU OF FIRE CONTROL -

ANTONIO CASTRO, CHIEF FIRE WARDEN

BUREAU OF URBAN SERVICES -

ROBERT E. FREEDMAN, CHIEF

The following secretaries also provided valuable typing assistance in the preparation of this Annual Report:

LYNNE E. WORRELL	-	BUREAU OF RECREATION
ROSE M. DISABATINO	-	BUREAU OF FOREST DEVELOPMENT
MARY ELLEN YETMAN	-	BUREAU OF FIRE CONTROL AND
		BUREAU OF INSECT PEST CONTROL
GRACE VITELLO	-	BUREAU OF URBAN SERVICES

# ANNUAL REPORT

1985

## BUREAU OF RECREATION

CHARLES H. DANE, CHIEF

Statistics for FY 1985 provide some interesting comparisons with FY 1984.

Overall attendance increased by 773,000 visitors over last year for FY 85 total of 11,833,324. Camping visitors and pool attendance increased slightly in most areas; rinks showed good increases; but paid day use was down in nearly all areas. These variations show the impact of inclement weather on a few weekends.

The end result financially was an increase of \$300.00 in Bureau revenues from FY 84 to FY 85.

### SEASONAL HIRING:

The filling of all lifeguard positions continued to be a problem in FY 85 particularly in regions 2 and 5. Recognizing this the Bureau has instituted a program to increase public awareness of this situation. Suggested formats for successful recruitment, training, and testing have been issued to all regions.

### "ROLLOVER FUND":

Fiscal Year 1985 saw a major increase in the 2120-0810 rollover account. With this money, many items previously out of reach because of budget constraints, were attainable.



Items purchased included: hand and power tools for construction and repair; movie projectors for interpretive programs; quadrunners and horse trailers for the park police program; and golf type carts and trash compactors for maintenance personnel.

All of this equipment will go a long way to improve our ability to better serve the public and make their visits to our facilities a truly satisfying experience.

#### POLICE COVERAGE:

Due to large amounts of Federal funds being available for road construction and repairs on the highways of the Commonwealth there was a great demand for police traffic details during the summer months. Police Departments across the state were tapped for this work, (Local, NRO's, State, and Registry), and this created a major shortage in police availability for our Forests and Parks details.

State Police mounted units are now permanently stationed at Walden Pond, Salisbury Beach, and Hopkinton State Park. This program is working well and is of great assistance to the Division.

The Park Police program expanded its horizons in many areas in FY 85. The addition of a horse trailer has increased mobility and has allowed patrols to cover Otter River, Lake Dennison, Wachusett Mountain, Upton, Ashland, Callahan, Robinson, Chicopee, Hampton Ponds, Nickerson, and Shawme Crowell State Forest. This program also participated in the Jr. Ranger program at Camp Winnataska (Girl Scout Camp) in Ashland. The presence of the mounted patrols has deterred inappropriate behavior and has been an excellent public relations tool. We plan to expand this program in FY 86.

#### LOG CABIN PROGRAM:

The beginning of FY 85 saw the completion of the first, DEM built log cabin. This cabin was constructed in Mohawk Trail State Forest by personnel from the Warwick Forestry Camp and DEM.

Construction of this prototype was slow and difficult with many changes and much learning. Hearty congratulations are due to all those involved.

The ultimate goal of this program is the construction of 30 log cabins per year statewide.

#### HANDICAPPED ACCESSABLE CAMPSITES:

During the last quarter of FY 85 we began a program designed to bring our camping areas up to accessibility standards for handicapped individuals who visit our parks.

Working with groups such as the "Independent Living Association," and "Starvos Incorporated", we have looked at, made recommendations for and begun improving areas in 4 of the 5 regions.

Our goal is to have one handicapped accessible campsite in each region for the FY 86 - 87 camping season. With the help of these groups and others we will advertise the availability of these handicapped sites, document the demand for such facilities, and then plan the future expansion of this program.

#### EXHIBITS:

The Bureau was involved in many exhibits and shows statewide with major efforts being mounted at the Eastern States Exposition in Springfield, and the New England Flower Show in Boston. DEM's flower show exhibit was awarded first prize in the "Natural Plantings" category.

#### JUNIOR RANGER PROGRAM:

The Division's Junior Ranger program improved upon its previously successful operation. In eight parks across Massachusetts, children ages 10 to 14 completed a series of work and education projects to earn a certificate and patch identifying them as Junior Rangers. Projects were in four categories; outdoor skills, park management interpretation, and resource management. In a ninth location, Ashland State Park, campers at a neighboring Girl Scout camp worked with the Divisions park management, fire control, and forestry staff while learning about the park, and as a result, qualified as Junior Rangers. Plans are made to expand this program for FY 86.

#### HOST FAMILY PROGRAM:

Another year of the "Host Family" program has proven profitable for all seven facilities involved. The families that participate are a great help in keeping the areas maintained, and assisting fellow campers with information.

Because of this programs popularity FY 1986 may see an increase in the number of areas in which this program is run.

#### PUBLICITY:

With new staffing in the Department's Communications office, the Bureau of Recreation has received a great deal of radio, television, and newspaper coverage over the year.

"Spots" on special events, programs, and the overall system are making the public more aware of what we offer and will surely boost visitation figures in FY 1986.



### SIGNAGE:

All regions have done a good job in coming up to specification with the internal signage at all facilities. With the help of the state DPW, more and more lead-in signs are beginning to appear on major roadways. At many of our areas we had difficulty receiving permission for erection of DEM lead-in signs. We have prepared lists of locations that need DPW signage and submitted them to DPW. The DPW will make and erect these signs as their work schedules permit.

Trail signage is an issue that has seen some interesting developments during the end of FY 85. A pilot program for new trail signage should start appearing in the field during the first quarter of FY 86.

### CAMPING:

State parks with camping facilities have enjoyed continued interest and growth in Massachusetts recreation areas. This increase in activity has required added expense and effort to maintain all facilities at a level Massachusetts state park visitors are accustomed to.

In order to ascertain the needs and opinions of the camping public, a survey is being conducted asking our visitors for the opinions on DEM policy matters and their thoughts on how facilities can be improved.

Results from this survey will assist DEM in decisions concerning opportunities offered by the Department.



#### DAY USE:

As fewer and fewer open water areas are available to the public and with a steady increase for the demand on water related recreation, the Divisions facilities featuring water based recreation become increasingly important. Proper management and planning at these facilities is necessary to anticipate and handle the expected increase. Proposals such as the increased beach area, bathhouse facilities and parking areas at Ashland State Park reflect the Department's commitment to future needs.

Those facilities equipped with picnic areas and trails share some of the increased attention of the public since they provide opportunities for outdoor activities not found in more rural settings. Cross country skiing and hiking have experienced a welcome increase in the number of participants. Our major effort in this area is an increased trail system with proper trail maintenance. Providing trails that are properly maintained, marked, and complete with updated maps will encourage the new enthusiast to use our facilities with confidence, while increasing the pleasure of the experienced user.

#### RINKS:

Skating Rinks have once again enjoyed tremendous popularity with the general public. Public skating, figure skating, college, high school, and youth hockey programs, broom ball, and speed skating are among the activities regularly scheduled at these facilities. There has been an increase in the number of retired people utilizing these facilities because of the physical and social opportunities offered. Senior citizens primarily utilized hours during weekday mornings which are normally not used by any other groups and provided an interesting increase in usage.

DEM's skating arenas are proud of the number of charitable organizations they have been able to assist; Toys for Tots, Boston Children's Service Association, Catholic Youth Organizations, Special Olympics, Girls Clubs, and many others have held fund raisers at our facilities.

Franklin, Newburyport, Lowell, and Peabody Rinks offered summer skating programs and numerous "no ice" summer activities which kept these rinks active year round. With the increases in summer activities and the continued interest in winter programs, both revenue and attendance increased in FY 85.

The rinks program has continued to assist the park program during the summer months by reassigning rink personnel to parks thus augmenting limited staffing.

#### POOLS:

Our Olympic sized swimming pools continue to offer a much needed recreational service in an urban environment. Red Cross "Learn to Swim" programs, swimteams, diving teams, and other recreational programming offer unique opportunities in many urban areas.

The Department is currently studying the construction of a new swimming pool in the Lawrence area. Currently four sites are under consideration.

#### ACQUISITION:

The Division acquired an additional 1,800 acres in FY 1985. This acreage was composed of 39 parcels at a total cost of over 2 million dollars. All but three of these parcels were additions to existing areas. These three exceptions were trail acquisitions, two parcels (totalling 19.5 miles) will make up the Douglas to Franklin Rail Trail, and the third is a 9.6 mile stretch from Northampton to

Amherst which is referred to as the "Five College Bike Trail". These trails are abandoned railroad rights of way as is the Cape Cod Rail Trail and surely will be just as popular once they are developed.

#### CONSTRUCTION AND REPAIRS:

In FY 85 the Department of Acquisition and Construction issued over 2 million dollars worth of construction contracts. These were basically for refurbishment as opposed to new construction. Nearly 90% of the dollar value of those contracts was expended in Region 2 Heritage Parks.

\*For specifics see Summary Construction and Repair. (Appendix F)

#### INTERPRETIVE SERVICES:

Interpretive Services continued its summer seasonal program during FY 1985 in 25 parks across the state. In addition to regular schedules including guided hikes, slide shows, campfires, and children's programs, each park sponsored two festival events during the season. These events were designed to attract non-traditional park visitors to the parks along with regular visitors. Events such as folk music performances, edible plant demonstrations, wildlife demonstrations, and Native American days focused attention on special features of the park system. The Division participated in Boston's Annual Fourth of July Harborfest by providing guided hikes on all of the Boston Harbor Islands and by sponsoring a special "Wind and Water Festival" on Gallops Island.

A major addition to the Interpretive program was the start-up of interpretive services at Pilgrim Memorial State Park. Six interpreters explained the significance of Plymouth Rock to over 400,000 visitors.



In addition special interest programs and tours at the waterfront and through historic Plymouth were offered on a daily basis.

Year round interpreters provided programs at Holyoke Range State Park, and Walden Pond. Region Two personnel completed a detailed replica of Henry David Thoreau's cabin at a site near the parking lot of Walden Pond State Reservation.

Preparations were made for the FY 1986 interpretive season with staff hiring through the spring and staff training during June. Sixty interpreters and twenty-five supervisors attended the Interpretive Training Institution, co-sponsored by the Division, the Appalachian Mountain Club, the MDC, and the National Park Services. An interpretive supervisor was hired and specific training held for Plymouth Rock staff, with the assistance of Plimoth Plantation. Island Managers for the Boston Harbor Islands received a full week of site specific training following the Interpretive Training Institute.

Interpretive Services responsibility increase significantly with the opening of several Heritage Parks during FY 1985. Programming, including the Junior Ranger program, began in Gardner, Lawrence, Holyoke, and Fall River, and increased in Lowell. Interpretive Services was involved with the hiring, training, and program coordination in these new urban parks. In addition, the Supervisor of Interpretive services worked as the Division liaison with the exhibit planning process in North Adams, Lawrence, and Gardner.



A major project during FY 1985 was the development of a ten year Master Plan for the Interpretive Services program. A consultant planner was hired and a draft plan was completed with the help of Department employees and outside citizens groups. This plan will be finalized in FY 1986 and used as a guide for future administration and growth of the program.

Brochure updates were completed and printed for the Interpretive Services brochure, the Boston Harbor Island Brochure, and Plum Island Tide Pool and "Gift of the Glacier" brochures. Texts were developed designing done, and editing work begun for Salisbury Beach, Grape Island, and the Pittsfield Handicapped and Walden Self-Guided trails. These brochures will be printed in FY 1986.

ANNUAL REPORT  
FISCAL YEAR 1985  
BUREAU OF FOREST DEVELOPMENT  
THOMAS F. QUINK, CHIEF FORESTER

INTRODUCTION

"Of all who plant and tend a crop, only the man of God and the man of the forest dedicate their lives to a certain faith in an everlasting harvest to be enjoyed in some future time by others." These words by George Cheek, former Executive Vice President of the American Forestry Association, serve as inspiration to personnel of the Bureau of Forest Development (BOFD) in carrying out the Bureau's mission of state land management, service forestry, forest products marketing and utilization, forest resources planning, urban and community forestry and resource conservation and development.

Thus, the Bureau through sound planning, management, and utilization practices for both the short and long term, focuses its efforts on humanized environments -- environments which have been transformed in such a manner as to be in harmony with the local natural forces as well as with human needs and aspirations. In the case of trees and forests, as well as of other living systems, we believe that improving on nature does not mean ignoring or distorting natural laws, but helping nature to express potentialities that enrich human life and at times increases ecological diversity, but that would have remained unexpressed in the state of wilderness.

The Bureau's programs continue to pursue these goals of effective and efficient stewardship of the Commonwealth's renewable forest resources.

## FISCAL MATTERS

The three-bureau state budget account (2120-1100), titled "Forest Management and Development" continues to function smoothly. Cooperation among the three Bureau Chiefs in fiscal matters has effectively utilized the flexibility of the budgetary process.

The Bureau of Forest Development's budget held steady in 1984/1985. There was one major increase. The Forest Resources Planner position was approved and funded for one-half of FY '85. The budget totalled just over \$1 million.

Federal grants and reimbursements for State & Private Forestry (S&PF) continued to dwindle. This decline is most dramatic in the Rural Forestry Assistance Program which services private woodland owners. The Reagan Administration continued to listen to organized forest industries who own and control large acreages of forests, and pruned back S&PF funds during the last few years. Forest Resources Planning monies were diminished also. The outlook for State and Private Forestry monies in the U.S.D.A. Forest Service's budget is not promising either. It does, however, offer a challenge which is being addressed by state foresters.

The Northeastern Area Association of State Foresters (NAASF) proposed a solution to this federal fiscal dilemma. NAASF passed a resolution which was adopted by the National Association (NASF), that would seek alternative annual funding (over \$300 million) for S&PF by levying an excise tax on all imported wood products. These dedicated monies would fund all existing State & Private Forestry Programs plus cost-share programs such as ACP, FIP, etc. This proposal is a major thrust of NAASF and NASF during the next few years.

Regarding NAASF, Chief Forester Quink is the Vice President (President-elect) of that organization and will be taking over the leadership in mid-July 1985.

## PERSONNEL

FY 1985 saw few changes/shifts in personnel, but a reclassification of a job title was a major happening.

A newly certified Civil Service list for the position of "Senior Forest & Park Supervisor", resulted in Jerome Ross, assistant to the Region I Management Forester, becoming the Senior F&P Supervisor at Massasoit State Park. William Anderson succeeded Ross.

Also, Susan McNamara, filled the Region III clerk position left vacant by Irene Bodah's retirement.

Daniel Perrin, long-time forester for the Division of Forests and Parks, was granted a leave of absence until early September 1985. Temporarily filling his position of Bristol County Service Forester is Joseph Perry, who was formerly the Forest and Park Supervisor at Myles Standish State Forest.

Dr. Muriel More, Forest Resources (Principal) Planner, moved into a new "02" state funded position in early calendar year 1985. Prior to this, Muriel was funded through a U.S.D.A. Forest Service grant.

A new "Forester" position for service forestry in Region III was requested in the FY 1986 state budget. All indications are that the new position will be established and funded for at least one-half of FY '86.

Bureau Secretary, Rose DiSabatino, unsuccessfully requested a reallocation of her position, Senior Clerk & Stenographer (Grade 8) to Head Clerk (Grade 12). As a result of a FY '84 DPA hearing, Rose was granted an upgrading to Principal Clerk (Grade 10).

Bruno Cadenelli, an assistant to Region V Management Foresters, retired on June 30, 1985 after 33 years of state service.

Resulting from a Civil Service Hearing, initiated by John Tiffany, the Civil Service Commission established the new title of "Assistant Forester". Prior to the ruling, personnel assisting state-land management foresters



were hired from a certified "Forest & Park Supervisor" list. Civil Service determined that the F&P Supervisor title was out-of-line with the actual duties the individuals perform. Thus, the nine (9) F&P Supervisor positions were reallocated to that of "Assistant Forester" and were upgraded two grades, from 12 to 14. The Department was verbally informed that the new title will be shifted from Bargaining Unit #2 to Bargaining Unit #9. Individuals presently filling the F&P Supervisor slots were elevated to Assistant Foresters and will continue in those positions until a Civil Service Exam is developed for the Assistant Forester title.

## PRIVATE LAND MANAGEMENT

### SERVICE FORESTRY OVERVIEW

The Bureau of Forest Development employs 13 state service foresters who provide marketing and technical assistance to the Commonwealth's private woodland owners. Eighty-seven percent of the commercial forestland in Massachusetts is privately owned. Service foresters administer the Forest Taxation Law (Chapter 61), which provides for a preferential property tax on classified forestland under management. They are also directly involved in approving and inspecting harvesting operations on private forestlands, as governed by the Forest Cutting Practices Law (chapter 132, s. 40-46). Additional projects include administering the American Forest Institute's Tree Farm program at the state level; assisting Christmas Tree growers; conducting workshops for loggers, landowners, consulting foresters and municipal officials; and attending conferences, workshops and meetings relevant to forestry issues.

### FOREST TAX LAW/FARMLAND ASSESSMENT

Chapter 61, The Forest Taxation Law, continued to be an active program and viable option for landowners to maintain their forestland under management and stewardship, thus being eligible for preferential property tax status. During FY 1985, 225 new applications/management plans representing 12,804 acres, and 250 applications/management plans for recertification representing 20,163 acres, were submitted for approval as classified forestland for a total of 475 plans and 32,967 acres. This represents approximately a 25% decrease in the number of plans and acreage submitted for classification from FY '84, the first decrease in several years. Region IV (Connecticut Valley counties) continued to maintain its role as the most populous region of the state for Chapter 61 land.

A problem tending to occur more so in eastern Massachusetts concerned

the subdividing of forestland into smaller properties and houselots. Land that has a subdivision plan on file with a municipal planning board is ordinarily ineligible for Chapter 61 and is thus covered by Chapter 41. However, an interpretation made by Department Counsel stated that forestland approved as a Form "A" subdivision under the Subdivision Control Act would not be disqualified for Chapter 61.

Two advisories were issued by the Department of Revenue in January, 1985 with rulings to close some loopholes in Chapters 61A and 61B that had become a concern in the previous year. The Department of Food & Agriculture, which administers Chapter 61A, defined trees as those raised as non-forest trees or nursery stock to be sold in whole for transplanting, and required any productive woodland under 61A to have a management plan. Chapter 61B for recreational and "aesthetic" woodland, now forbids any extensive harvesting beyond 10 cords per year. It is hoped that these advisories will discourage landowners from putting their forestland into the easiest program for preferential tax status, and thereby uphold the public purpose towards which these laws are directed.

A change was made in mailing out approved management plans/certificates and notices of recertification to landowners. By changing from certified mail with return receipt requested to a certificate of mailing, the cost of postage was reduced by at least \$1.00 for each letter or package. This has resulted in significant savings in postal expenses, and yet proves that the documents were mailed, satisfying the Rules & Regulations of the Law.

#### FOREST CUTTING PRACTICES LAW

FY 1985 marked the first full fiscal year for the amended Forest Cutting Practices Law (M.G.L. Chapter 132, s. 40-46) and its accompanying Rules and Regulations. Cooperation from the forest industry has generally



been satisfactory, as they seem to realize that a uniform statewide law is easier to abide by than the plethora of differing municipal by-laws which could have been implemented. Some problems with enforcement have been encountered, as is to be expected for a new law, but in general it has been effective.

Various concerns regarding enforcement and administration of the FCP Law were addressed at several meetings for the State Forestry Committee, Advisory Committee and Chapter 132 Coordinators. One obvious problem is the occasional logging jobs discovered by DEM foresters without the required cutting plan and timber harvesting license. In these instances, loggers are claiming they are cutting less than the 25 MBF/50 Cord amount (and therefore exempt from the law), or are converting the land to some other use. DEM foresters have also had problems of knowing when logging jobs are in actual progress so that they can be inspected. A postcard mailing system was recently implemented whereby the landowner's agent would notify the Division as to when logging begins and ends. Another concern involved private foresters acting as landowners' agents, whose credentials are questionable or are unknown to the Division. Registration or licensing of foresters may be necessary in the future, as some states have already done.

To meet the law's requirement that operators display familiarity with Massachusetts laws that concern timber harvesting, changes were made in the harvesting license application procedures. A handbook entitled "101 Questions & Answers About Massachusetts Forest Laws" was developed by the State Forestry Committee and representatives of DEM, the Mass. Wood Producers Association and Mass. Association of Professional Foresters. A take-home test containing 10 questions from the handbook is sent to harvesting license applicants along with the handbook. The test is then sent



back to the Boston Office, at which time a harvesting license is issued, provided that at least 70% of the answers are correct.

During fiscal 1985, a small (6%) increase in cutting plans submitted to the Division was evident from the previous year. A total of 1,123 cutting plans were approved by DEM foresters, prescribing 75,795 MBF and 87,710 Cords to be harvested on 40,764 acres of mostly private forestland throughout the state. Although more cutting plans were submitted than in FY '84, they collectively represented a decrease of about 10,000 MBF of timber for harvesting. This seems to indicate that logging jobs are of smaller amounts and that more "borderline jobs" (i.e., harvesting around 25,000 MBF or 50 Cords) are obeying the law rather than risk being shut down. Twenty-one cutting plans were disapproved, and at least 5 stop orders were issued for logging jobs in progress, until corrective measures would be taken.

Richard Johnson (Southern Worcester) worked closely with Sturbridge Town Officials to iron out problems arising from their own municipal by-laws concerning weight restrictions on logging trucks and necessity of posting performance bonds.

Informational workshops on the Forest Cutting Practices Act were also conducted by several service foresters for Conservation Commissions, Boards of Selectmen and municipal Planning Boards to familiarize them with the law.

#### CUTTING PRACTICES

The Chief Forester and the Bureau's foresters are authorized, as agents of the Director, to administer and enforce the Massachusetts Forest Cutting Practices Law (M.G.L. Ch. 132, S. 40-46). The Bureau's Boston office secretary has statewide responsibility for collecting, recording and filing all pertinent materials relative to this law.

Statistics and summary of timber harvesting operations pursuant to this law during FY 1985 are as follows:

COUNTY	#CUTTING PLANS (APPROVED)	STUMPAGE (MBF)	STUMPAGE (CORDS)	ACRES
Bristol	20	170	2,343	630
Plymouth, Cape & Islands	37	1,835	2,577	1,032
Norfolk	16	597	400	272
Essex	16	853	1,452	374
Middlesex	74	4,087	3,281	1,807
No. Worcester	146	10,389	13,392	5,356
So. Worcester	164	11,208	18,138	6,290
E. Franklin	138	8,700	12,060	5,819
W. Franklin	125	8,958	3,505	3,910
Hampshire	131	9,623	13,931	4,933
Hampden	118	7,773	7,884	4,397
N. Berkshire	79	5,754	6,564	3,228
S. Berkshire	59	5,849	2,183	2,716

TOTALS	1,123	75,796	87,710	40,764
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CUTTING PLANS DISAPPROVED	21
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STOP ORDERS ISSUED	6
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TIMBER HARVESTING LICENSES ISSUED	636
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- In-State Resident Loggers	563
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- Out-Of-State Loggers	73
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#### HARVESTING LICENSES

Section 46 of M.G.L. Chapter 132 requires that a person, firm or corporation harvesting timber or other forest products for hire or profit, and not exempt by section 44, must obtain an annual timber harvester's license from the Division. The number of licenses sold for FY 1985 amounted to 636; of which 563 were for in-state resident loggers, and 73 were out-of-state loggers. This represents a 2% decrease in the number of licenses sold during the previous fiscal year.

Concern has been expressed by loggers that the timber harvesting license be issued on a multi-year basis and with a permanent or semi-permanent number per the individual, as is done with driver licenses and motor vehicle license plates. These concerns will be addressed at an

upcoming State Forestry Committee meeting early in FY 1986. It is not expected that either of these issues will find approval. Elaborate and expensive record-keeping and information retrieval systems would have to be developed.

A new timber harvester license will be issued beginning in FY 1986. It is wallet-sized, printed on durable paper and will be a different color each year.

#### PRIVATE CONSULTING FORESTERS

During FY 1985 there were 1,030 landowner requests for forestry assistance referred to private consulting foresters, almost a 10% increase from FY '84. This indicates a growing awareness among private woodland owners of forest management and the services and programs offered by the Division. The requests are generally for procuring the services of a private consulting forester to write Chapter 61 Forest Management Plans or Cutting Plans for timber harvesting operations.

Listed in the 1984 primary industry directory are 134 private consulting foresters that do business in Massachusetts, providing a wide range of forestry services. Each DEM Service Forester also maintains a list of consulting foresters known to operate in his/her district.

#### TREE FARM PROGRAM

Tree Farms are woodlands of 10 or more acres, usually privately-owned; managed for timber production, wildlife habitat, watershed, recreation and aesthetics; with silvicultural practices implemented to minimize the impacts of insects, disease and fire. There are currently 1,238 active Tree Farms comprising 293,012 acres in Massachusetts. There are nearly 55,000 Tree Farmers nationwide who manage their woodlands for pride, profit and pleasure. They help meet the nation's growing needs for wood and paper products.



DEM Service Foresters actively participate in the American Forest Institute's (AFI) Tree Farm program, and during FY 1985 inspected about 140 Tree Farms for certification or recertification into the program. The Bureau also helps AFI in cost-sharing the Tree Farm Booth at the Eastern States Exposition (The Big E) in West Springfield and at the Topsfield Fair. Several DEM service foresters also staffed the booths at both these fairs.

For the second consecutive year, the Massachusetts Tree Farm program received honors as the best in New England, at the annual Tree Farm meeting and banquet in February 1985.

A joint Tree Farm/Forest Products Week was held for the first time during the third week of October. DEM foresters Richard Kulis, Jack Jackson and Gerry Veale, as officers of the Mass. Tree Farm Committee, represented both AFI and the Division in planning press tours and media events with the Marketing & Utilization staff.

The state's Outstanding Tree Farmer of 1985 is Adrian S. Meyer of Peru, a small town in the Berkshires. Mr. Meyer, whose 142-acre Tree Farm has been certified since 1974, will be officially presented this honor during the Tree Farm Banquet at the Big E in September 1985.

#### CHRISTMAS TREE PROGRAM

With the current popularity of "choosing and cutting" one's own Christmas tree coupled with the demand for exotic species other than the traditional balsam fir and white spruce, Christmas Tree growers have become an important sector of the Commonwealth's forest landowners. The Bureau assists the Massachusetts Christmas Tree Association (MCTA) through marketing publicity, technical advice and referrals.

An annual list of Christmas Tree dealers is compiled by MCTA and sent to the Boston office for subsequent publicity. Bureau Foresters obtained



and arranged the transportation of Christmas Trees to the Big E in West Springfield, to the Governor's Office and State House. The trees had been provided by members of the MCTA.

DEM Foresters were also active in attending several MCTA meetings and workshops on insects/diseases and taxes.

A plantation of Christmas tree saplings at Wachusett Mountain State Reservation is doing well. Established several years ago, the plantation will eventually serve as a source of Christmas trees for various state buildings.

#### FEDERAL FORESTRY PROGRAMS

The Forestry Incentive Program (FIP) funding for Massachusetts dropped from \$129,884 the previous year to \$108,414 this past federal fiscal year, a decrease of 16.5%. Since 1982 funding has decreased about 27%. This appears to be a combined result of FIP decreases nationwide and the new allocation formula used last year.

A total of 92 cases were reported complete, representing a 22% decrease in cases from the previous year. However, the summary of accomplishments shows that paperwork has not been completed on cases in Bristol, Hampden and Middlesex counties, even though each of these counties had been allocated its full share of funds. A total of 951 acres were treated for FIP funding, which is an increase of 6.5% from the year before. All treatments completed were classed as timber stand improvement, with none being reported for planting, site preparation or other silvicultural practices. Interestingly enough, 56% of the acres completed were in Berkshire County.

Overall, it appears that FIP accomplishments in 1984 compared favorably with those of 1983, despite a decrease of 16.5% in the total allocation. Program activity is most heavily concentrated in Berkshire and

Worcester counties, which together reported 62% of the cases and 74% of the acres treated.

#### INFORMATIONAL PROGRAMS

Most service foresters participated in spreading the message about the Forest Cutting Practices Act to various sectors of the general public who are directly or indirectly involved with the law. This second year of the revised law necessitated having training sessions for persons other than DEM personnel to help "work out the bugs" in its enforcement and administration. Workshops were conducted for municipal Conservation Commissions, Boards of Selectmen, Cooperative Extension Service representative, Boards of Assessors and private consulting foresters. Several foresters took part in Arbor Day and Career Day programs at local public schools in their district.

All of the service foresters attended a variety of workshops, seminars and demonstrations sponsored by public agencies and industry associations to increase their knowledge. Topics of these educational programs included aerial photo interpretation, insect identification, chainsaw safety, forest soil erosion, Christmas tree pests, soil productivity, wood energy, felling/bucking, business practices, prime lands classification, Project Learning Tree, and acid rain deposition. Tom Quink (Chief Forester) hosted the 31st Annual CFM Supervisors-Extension Forester Meeting in Springfield the last week of FY 1985 that was attended by more than 50 people from all over the Northeastern Area states including several Bureau foresters.

The Society of American Foresters (SAF) New England Winter Conference held in Portland, Maine was attended by most Bureau personnel. It focused on managing forests for fish, birds and fur-bearers coincidental with that for wood products. The conference theme was congruent with the Commonwealth's mandate of managing forests for a multiplicity of uses. Much "applied" information was garnered.

## ACID DEPOSITION PROJECT

Tom Quink has been a member of the Acid Deposition Research Review Committee, which is overseeing a statewide evaluation on the extent and severity of forest deterioration from acid deposition and air pollution. One of the two major research projects already underway is the "Assessment of Forest Stress" using color infrared aerial photography.

Because authorization for funding from the State Legislature was approved early in September 1984, aerial photography could only be completed in southeastern Massachusetts. The required "green leaf" stage in the forest foliage would remain later in the fall in that part of the state. Aerial photography in southeastern Mass. was done by the James Sewall Company of Old Town, Maine. Interpretation was then done by the Map-Down Project at the University of Massachusetts under the direction of Professor William MacConnell in the Forestry Department, and currently is completed for the 30% of the state that was flown. Interpretation involved locating potentially stressed areas, which show as discolored on the color infrared aerial photographs, and then transferring this information to USGS maps.

The final phase of this project, to occur during FY '86, is to determine the probable cause and extent of impact in these stressed areas by on-site inspection. Late in FY 85, Professor Matt Kelty of the U. Mass. Forestry Dept. was hired as coordinator to organize a field investigation team and develop survey methods. After certain forest areas have been identified as stressed, ground inspection will be conducted by a team of scientists representing the following scientific disciplines: entomology, pathology, forest ecology, soil science and forestry.



## OTHER SPECIAL PROJECTS

DEM Foresters continue to serve on a 24-member advisory committee to the Hilltown Community Development Corporation (HCDC). DEM's Worcester County service foresters were active in educating teenagers and youngsters about forest management and natural resources. They assisted in conducting a Young Sportsman's Junior Conservation Camp and brought about 150 youths to the forestry museum at the Harvard Forest, explaining the various exhibits on forestry history and ecology. They also spoke about forestry and forest management at a Boy Scout Jamboree.

The Mount Tom Reservation Forestry Project was put on hold by the Hampden and Hampshire County Commissioners as a result of pressure from several small but vocal environmental organizations. DEM's Hampden County Forester had been overseeing the management plan. One area of about 50 acres was harvested, and another area was marked for logging but was never done. Conservationists had convinced the trustees of the Reservation that the forest should not be selectively harvested, but should remain in its natural state. The present overabundance of dead and diseased trees is causing concern among managers about the future condition and worth of this publicly owned acreage for forest products and recreation.



## STATE FORESTLAND MANAGEMENT

### PROGRAM SUMMARY

FY 1985 marked the second fiscal year for having eight management forester teams. They are responsible for the planning, implementation and supervision of forest management and forest products harvesting on more than 265,000 acres of forests, parks and reservations owned by DEM.

Attainable harvest figures were established by the Bureau for each management district early in FY 85, reduced slightly from the previous year. Foresters came close to reaching the board feet volume target, and surpassed the target for cordwood and contracted revenue on stumpage sales to be harvested by private logging companies. Total amounts sold for harvesting were 5,628.8 MBF of sawtimber stumpage, and 9,463 cords of fuelwood stumpage, generating \$583,273 in contractual revenue for the General Fund.

The Bureau bids out forestry work on a contractual "03" basis to private consulting foresters in each of the management districts. Their duties, under supervision of management foresters, include boundary maintenance, marking timber sales, mapwork, layout of logging roads and landings, and any special projects that may arise.

### COMMERCIAL SAWTIMBER SALES

Management forester teams marked and sold 5,566,804 board feet (or 5.566.8 MBF) of hardwood and softwood stumpage during FY 1985, generating \$538,342 in contractual revenue. Although the number of bids generally varies from 1 to several, all but 2 of the 66 timber sales established were sold. The bids for these two sales were considered too low, and they will be offered for sale again in FY 86.

Several sawtimber sales included in these volume and revenue figures were actually for "in-house" use by DEM and traded to another state agency for site work. These miscellaneous sales are described in more detail later in this report. Prices received for stumpage averaged about \$97/MBF

on a statewide basis, down slightly from the previous year. Several of these sales were actually combinations of sawtimber and fuelwood stumpage, with a total of 4,928 cords sold in conjunction with the above-indicated board foot volume.

#### COMMERCIAL FUELWOOD SALES

Because of the extent of low-quality and small diameter hardwood stumpage in much of the state-owned forestland, commercial fuelwood sales are marked and sold as a means of conducting timber stand improvement (TSI). These sales consist of improvement cuttings, intermediate thinnings and harvesting poor quality, diseased or deformed trees, thereby allowing more growing space for the better potential crop trees. During FY'85, over 400 acres of forestland were slated for TSI by harvesting fuelwood, in which 3,488 cords were marked and sold. These 21 fuelwood sales generated \$26,462 in contractual revenue. Three fuelwood sales did not receive any bids and will be announced for sale in FY'86. Converting the board foot volume of some sawtimber in one particular fuelwood sale results in an additional 118 cords, for an overall total of 3,606 cords slated for harvesting. The price per cord averaged only \$7.34, a 50% decrease from FY'84!

#### HOME FUELWOOD PROGRAM

The Home Fuelwood program, initiated several years ago when home heating by wood became popular, was again conducted in FY'85. In this program, the public submits sealed bids on designated woodlots containing anywhere from 2 to 20 cords, and then harvest and remove marked trees for their personal domestic fuelwood use prior to the first snowfall. The purpose of this program is to assist homeowners who are committed to using wood as their primary source of fuel. It is also a means of having timber stand improvement done in forest stands containing a large proportion of poor quality or diseased trees.

During FY'85, the Home Fuelwood program was established at 14 state forests encompassing all 8 management districts. A total of 127 lots were contracted to individual home owners, containing 1,047 cords of fuelwood stumpage harvested and yielding \$18,409.54 in revenue.

#### MISCELLANEOUS FOREST PRODUCTS SALES

The Bureau's first biomass sale was conducted by the Mid-State management forestry team at Rutland State Park during the second half of FY' 85. This sale was done on plantations of red pine and white pine which had been established by the Civilian Conservation Corps (CCC) during the Depression of the 1930's and had remained neglected ever since. Thus, it was decided that a thinning and selling the stumpage on a biomass tonnage basis would be the best way to accomplish TSI and still receive some revenue. The LeTourneau Land Clearing Company from New Bedford was the high bidder. By using a feller buncher and whole-tree chipper, this very reputable company was able to maneuver deftly in the dense plantation, leaving no slash on the ground and an overall manicured appearance in the 26-acre area that was thinned. The stumps of cut trees were also sprayed with a fungicide to prevent the spread of Fomes. Although the biomass sale realized only \$3,031 for the 3,031 tons of stumpage harvested (at \$1/ton) it accomplished some necessary and extensive silviculture in a relatively short amount of time.

Several other contracts established for forest products sales consisted of additional mortality sold in conjunction with sales already in progress, "in-house" harvesting for DEM-use, and inter-agency sales to the Division of Fisheries & Wildlife in which stumpage is traded for site work. "Dollar-equivalent" and volume figures for the "in-house" and inter-agency sales are included in with the commercial sawtimber sales to show the equivalent worth and amount, although technically no money changes hands.



At least 236.5 MBF, and 57 cords of stumpage were contracted for harvesting on Division of Fisheries & Wildlife lands, in which DEM realized a "dollar-equivalent" worth of about \$24,800. An "in-house" sale consisted of 20,000 board feet of red pine harvested by Warwick Forestry Camp crews for eventual DEM-use as park furniture and signs etc., resulting in a cost-saving to the Commonwealth.

#### SUMMARY OF FOREST PRODUCTS SALES

101 contracts were established with logging firms or individual loggers for removal of specified sawtimber and fuelwood stumpage. These consisted of 66 sawtimber sales, 21 fuelwood sales and 14 Home Fuelwood programs, which have just been described.

Forest products sales are announced to the general public by mailing out a prospectus (first page of contract) to anywhere from 20 to 75 or more licensed timber harvesting firms known to do business in a particular forestry district. Part of the FPM&U initiative for FY 86 is to develop a 7-state network for selling forest products from state lands to the Northeast industry.

#### BOUNDARY MAINTENANCE

With over 1,500 miles of boundaries on the numerous parcels of state-owned forests and parks, it is essential to inspect and re-mark them at least once every 10 years. During FY 85, about 44 miles of boundaries were re-established, with much of this done in the Western Connecticut Valley district. Management foresters have increasingly found it difficult to assign sufficient man-hours to boundary maintenance, due mainly to the time involved in establishing and administering forest products sales.

#### G.O.A.L.S. INVOLVEMENT

Several management forester teams continued their involvement in developing G.O.A.L.S. plans for several state forests and parks. These Guidelines for Operations and Land Stewardship, in the form of management



plans, will detail the objectives of management, expansion, use and protection of various parks and forests. The management foresters, whose districts include those selected state properties, are a key part of the team in the planning process, which includes planners and landscape architects. Their responsibility includes stand analyses of on-the-ground resources, research on past land-use and ecology, writing 10-year recommendations on management and silvicultural practices to be implemented and attending periodic GOALS meetings that are sometimes open to the public.

GOALS planning was begun on two DEM properties in FY 85: the J. Harry Rich State Forest in the Northeastern district, and the DAR State Forest in the Western Connecticut Valley district. In this latter property, the inventory process has been nearly completed.

#### SPECIAL PROJECTS

The following projects highlighted here are just some of many performed during the past year. The Southeastern management forestry team assisted Professor William Patterson with his research on the vegetative history at Myles Standish State Forest. They also did experimental plantings of Black Locust, Loblolly/Pitch Pine hybrids, and American Chestnut at several state forests. At Bradley Palmer State Park, the Northeastern team and the park crew harvested red pine that was used for a log cabin in DEM's exhibit at the New England Flower Show. A regeneration study was done by the Western Connecticut Valley team on an area that had been logged a year ago at the H.O. Cook State Forest. William Cote, Assistant Management Forester, updated computer and word processing programs for tallying inventory data and printing out timber sale contracts. He also developed a computer program to determine volume from stump measurements and modified several other programs for Bureau use.

Management foresters also did land acquisition evaluations, trail surveys for recreational use, deed research to establish boundaries and access rights, and attended workshops on various subjects pertinent to forestry.

## FOREST PRODUCTS MARKETING AND UTILIZATION

The entire Commonwealth -- through increased small businesses, higher employment, a more stable tax base and wise use of forest resources -- shares in the benefits offered by the FPM&U Program. This program plays an integral role in the development of industry and small businesses within the Commonwealth due to its involvement in the various stages of wood processing, from the stump to the finished product. Direct beneficiaries of this program are woodland owners, loggers, wood products manufacturing firms and their employees. Alternative fuel industries and persons who supplement their energy needs with cordwood, wood chips or pellets also benefit.

The FPM&U Program assists forest landowners and wood processors through technical services, advice and referrals on the harvesting, manufacturing and marketing of forest products. Increased utilization of wood, maximized efficiency in the manufacturing process and expansion of markets are key objectives of this program.

### INDUSTRY ASSISTANCE AND PROMOTION

Besides involvement in planning a wood products industry trade show, mentioned later in this report, the FPM&U staff sought to promote the wood products manufacturing industries by other means. The Bureau published A Guide to Exporting Furniture and Related Wood Products as a handbook. Copies have since been sent to various companies, industry associations, the U.S. Forest Service and the National Association of State Foresters (NASF). It is being used as a guide by NASF in developing regional workshops on wood products exporting. One such workshop is planned for FY 86 in the Boston Area.

Several articles on innovative technology (System 6, Woodchuck Truck, red pine for state park furniture), interesting companies (North Carver Pine sawmill) and various events (Forest Products Week, conference on exporting) were published in magazines and newspapers that cover the wood

products industries, forest management and the parks/recreation industries.

A publication entitled Massachusetts Timber Economy: A Review of the Statistics 1984, was published by the Bureau's M&U program. This handbook was compiled and researched by scientists of the Northeastern Forest Experiment Station, U.S. Forest Service in Burlington, Vermont. Numerous copies have since been distributed to interested persons requesting statistical information on the state's forest-based industries.

A feature article on forestry, written by Boston Globe columnist Peter Anderson, appeared in the January 6, 1985 edition of the Boston Globe Magazine. Much information and additional sources to contact were provided to Mr. Anderson by the Chief Forester and M&U Specialist. The article enlightened the general public with an in-depth look at the various segments of forestry in Massachusetts, including the wood products harvesting and manufacturing industries, forest laws, government agency programs, consulting foresters, history of forests and the industries and management of private and state forestland.

The M&U Specialist was appointed to a Statewide Wood Industry Advisory Council and participated in the two meetings held so far. This newly-established council advises the Executive Office of Economic Affairs (EOEA) on the best way to assist wood manufacturing industries that apply to Economic Affairs for various support services. To date, the main thrust of the council has been to advise Economic Affairs on the Hilltown Community Development Corporation's (HCDC) Wood Industry Project, which is attempting to establish a commercial dry kiln facility and pallet operation in western Hampshire County.

The M&U staff also provide stumpage price information to mills, loggers, woodland owners, municipal officials and other interested persons through the "Massachusetts Roundwood Stumpage Price List". Compiled by



the M&U Assistant from questionnaires distributed to the Mass. Association of Professional Foresters (MAPF) and the Mass. Wood Producers Association (MWPA), the stumpage price list was re-designed and published in December 1984 and May 1985. It is sent to the Mass. Association of Assessing Officers (MAAO) to assist municipal assessors in determining the value of timber harvested, and is also published in The Forestland Review. In addition, the stumpage price list is sent to an increasing number of land-owners, loggers and foresters that request it.

#### WOOD PRODUCTS TRADE SHOW

The Northeast Wood Products Expo (NEWPEX '85) became a major project of the M&U staff during FY 1985. The idea for a trade show was proposed by the M&U Specialist in January 1984. Soon after, an Advisory Committee was established, comprised of state, federal and private industry association representatives to begin planning the trade show.

NEWPEX '85, to be held November 21-23, 1985 at the Marriott Hotel Copley Place in Boston, will offer a regional marketplace for the manufacturers of semi-finished to finished wood products and components from 10 northeastern states to buyers and finished product makers from other states and countries. The intent of NEWPEX '85 is to foster the expansion of markets for manufacturers (particularly small to medium size firms) of dimension lumber, furniture and fixture parts, cabinet stock, handles, millwork, novelty/toy parts, marine items and other products.

Early in FY 85, a professional exposition management firm from Boston known as Dame Associates Inc., and represented by Mr. Doug Dame, was chosen as the trade show manager. The M&U staff provided the expo manager with names of targeted companies for him to establish mailing list of potential exhibitors and attendees. They set up meetings of the NEWPEX Advisory Committee in several different locations every 2 or 3 months, coordinated planning efforts with the chairpersons of each subcommittee and



the expo manager, sent out meeting minutes and other correspondence regularly, promoted the trade show at various association conferences and to individual companies via the telephone, and arranged for advertising and press releases in several industry publications.

#### "SYSTEM 6" PROMOTION

In an effort to establish a new wood products manufacturing industry in Massachusetts that would utilize the abundant and existing low-quality timber resource, the M&U staff promoted the System 6 technology.

With this technology, low-grade hardwood is processed into high-valued end products such as furniture and cabinets by producing a new intermediate component known as standard-size blanks. Among the manufacturing concepts involved are highly automated methods of converting logs to blanks, total processing of every board that contains a minimum-size cutting, and minimized machine-operator decisions and limited choices. Because hardwood forests do not yield an adequate supply of large, high-quality logs desired by these manufacturers, the result tends to be shortages and price increases. If the furniture and cabinet industries converted to using these high-quality blanks (edge-glued panels of clear wood) instead of using high-grade lumber, they would avoid the steep price increases for this raw material.

To meet this effort, the FPM&U staff arranged a second workshop on System 6 technology, hosted by Director Bliss (the first workshop was held in FY 84, hosted by Commissioner Gutensohn) at Mt. Wachusett Community College in November. The one-day session featured scientists from the Forest Products Lab in West Virginia who had developed the technology. Various aspects of the technology were explained, including economic analyses of starting a System 6 plant and a presentation on cost-sharing programs to finance plant installation. The workshop was attended by about 20 persons from wood products manufacturing companies and sparked some

genuine interest. Soon after, an article by the M&U staff appeared in a few industry publications, and even generated a couple of inquiries from outside New England.

Since the workshop, the M&U Staff has worked closely with two targeted wood products manufacturing companies in assisting them to establish a standardized blanks processing facility. This has involved several meetings with each or both of the industry executives and with municipal officials.

From research conducted by the U.S. Forest Service, resource analyses have recently been conducted to determine the extent of the raw material in the regions of which the 2 targeted companies are located. An economic feasibility study is now being done, which is partially funded through the "Improved Wood Utilization Program".

It is hoped that Massachusetts will have the nation's first operating plant for processing short logs into blanks.

partially manufacture the blanks with some other company completing the processing. The state contains large amounts of small diameter white pine which could be utilized in producing standard size blanks from edge-glued pieces.

#### FOREST PRODUCTS WEEK 1984

A proclamation signed by Governor Dukakis declared the week of October 22-26, 1984 as Massachusetts Forest Products and Tree Farm Week, focusing attention on the forest products industries and their contribution to the state's economy. Approximately 45,000 people are employed in the overall forest and wood products industries which include paper manufacturing, retailing and affiliated service industries; producing about 6.5% of the state's total industrial payroll and millions of dollars in tax revenues.

Opening Day ceremonies, held on the Boston Common directly in front of the State House, featured New England's Outstanding Tree Farmer and his

team of oxen performing a log-hauling demonstration to the gathered crowd and many curious on-lookers. Press tours of Tree Farms and wood products manufacturing companies were also planned. The Essex County tour (Region II) attracted several newspaper reporters, and subsequently several fine articles, most notably an excellent article in The Christian Science Monitor. Region IV's event consisted of a press conference at the new Holyoke Heritage State Park with exhibits on forestry, the wood processing industry and an excellent display of horse logging photographs taken by the Hampshire County service forester. Articles promoting forest management and the wood manufacturing industries appeared soon after in Springfield area newspapers.

#### INDUSTRY DIRECTORIES

A new primary industry directory entitled 1984 Sawmillers, Loggers and Consulting Foresters Directory was published during FY 85. Directories were sent to many companies and individuals, mostly from out-of-state, that had requested them during the past several months. The primary directory will also be mailed to the secondary wood products industry early in FY 1986, fulfilling its purpose as a marketing tool.

Another directory, entitled Massachusetts Secondary Wood Products Industry Directory, was compiled by a private consultant on contract with the Bureau. Listing almost 600 manufacturers of semi-finished and finished wood products, the directory will be published during the summer of 1985, and then sent to the primary and secondary industries early in FY 1986.

The M&U Assistant developed and sent an exporting questionnaire to targeted companies that manufacture lumber and other unfinished wood products. Fifty percent of the questionnaires were returned and then forwarded to a marketing representative in the Dept. of Food and Agriculture. The markets office of that agency is developing an export directory listing Massachusetts companies in the food/fisheries processing, agricultural and forest-based industries that do export or want to export.



## TECHNOLOGY TRANSFER

The M&U staff attended and/or planned several workshops, industry association meetings and conferences during FY 85. As part of the program initiative, the M&U Specialist was elected vice-chairman of the Forest Products Research Society's (FPRS) Northeast Section. This responsibility consisted of planning program agendas for the Fall 1984 and Spring 1985 meetings of that association's regional section, which were held in Portland, Maine and Boston respectively.

The annual meeting of state and federal Marketing/Utilization Specialists representing the 6 New England states plus New York was held at the Alton Jones Environmental Education Center of the University of Rhode Island. The M&U staff attended/participated.

Other events attended included the Building Materials East Expo (sponsored by the Northeast Retail Lumbermen's Association), the Home Show, and the Annual Conference of the Northeastern Lumber Manufacturers Association.

While the 3-year Plan of Work, submitted to the U.S. Forest Service, did not receive any funding, the RC&D component of the Bureau continued to be actively involved with the forestry issues and goals of western Massachusetts. Extended injury in the Region V forestry staff necessitated a shift in the duties of the RC&D Forester to the Northern Berkshire Management District, thereby lessening influence in other circles. However, the RC&D Forester was active in numerous projects, meetings, technology transfers and field visits in the areas of Wood Energy/Biomass, Marketing & Utilization, Private Forestland Management, Industry Contact and State Forestland Management. Several of these events are highlighted as follows.

The RC&D Forester served as Bureau representative at meetings involving the DEM/Dept. of Energy Wood Energy Development project and a DOE/DEQE/Legislative forum regarding air quality standards for wood-fired industrial boilers. He organized and hosted a Felling and Bucking Workshop for loggers, planned Forest Products/Tree Farm Week events in Regions IV and V, and assisted several mill owners by explaining ways to improve operating efficiency, product quality and marketing strategies.

Mr. Veale also chaired the 1984 Tree Farm Booth committee for the Eastern States Exposition and was instrumental in developing the land-use history theme of the booth. He served on the Mass. Tree Farm Executive Committee and represented DEM at the Twilight Meeting of the Mass. Christmas Tree Association.

Other projects in which the RC&D Forester participated in were as a member of the Advisory Committee for the Northeast Wood Products Expo; serving on the Wood Advisory Committee for the Hilltown CDC project; organizing a tour of International Paper Company's Corinth mill in New York to develop a market for spruce from state forestland timber sales; and drafting the RC&D section for inclusion in the Forest Resources Plan.

## URBAN AND COMMUNITY FORESTRY

The Urban and Community Forestry Program enjoyed a very active year during FY 1985. In addition to the usual assists, some of the highlights follow:

### SPIRIT 85

The U&CF Program was chosen to coordinate the Division of Forests and Parks' efforts toward the beautification of the Commonwealth. Through the use of intra-regional competition and by encouraging imaginative use of our limited funds, much was accomplished. Areas were judged by the Association of Massachusetts Garden Clubs and prizes are to be awarded. Each region produced a winner and the competition was fierce. Winners and prizes are yet to be announced. In the near future each regional winner will be treated to a photo session with the Governor.

### ARBOR DAY 1985

Arbor Day was proclaimed by Governor Dukakis and celebrations were sponsored by the U&CF Program in each of the Division's 5 regions and in Boston as well. A common linden (*Tilia vulgaris*) was planted on the Beacon Street side of Boston Common. This healthy young tree is replacing a victim of Dutch Elm Disease.

In Region I, every forester and fire warden sponsored a celebration. Arbor Day was well celebrated in Southeastern Mass.

### PARKER RIVER NATIONAL WILDLIFE REFUGE

The U&CF Program Coordinator was selected to represent the Division of Forests & Parks during the process through which the U.S. Fish & Wildlife Service made known the process they intend to utilize for eliminating spent lead shot from certain of their areas. Hazardous waste on the refuge! This was a very interesting project.

Functioning on the assumption that the spent lead shot was available for ingestion because of its failure to settle very deeply into the peat-



like soils, it was proposed, and is currently being carried out, to deep-plow the area. This will turn over the upper layer of shot-filled soil and bury it beneath the feeding zone of the migratory water fowl.

#### 1985 TREE WARDENS

The U&CF Program made a presentation to the Massachusetts Association of Tree Wardens on the Forest Cutting Practices Law (Chapter 132). We realize that the Tree Wardens are "Jacks of All Trades" concerning trees. The U&CF Planner informed them of recent changes in Chapter 132 and how DEM administration could help them. The talk was very well received.

#### LAWRENCE HERITAGE STATE PARK

The U&CF Program provided diagnostic information to this new area concerning the state of health of some of its plant material. Improper planting techniques, coupled with an over enthusiastic irrigation program, caused some problems.

#### WINCHESTER TOWN FOREST

The U&CF Program provided management advice to a group of concerned citizens and officials from the Town of Winchester. Their town forest has been suffering from neglect ("Proposition 2½" disease). Evidence of old management was very obvious. It's a shame to see such a well cared for resource slowly slipping away, and it is not too late to implement forest management practices.

#### URBAN FORESTRY CONTRACT WITH UNIVERSITY OF MASSACHUSETTS

The U&CF Program once again sponsored a contract with the University of Massachusetts Shade Tree Labs. The end result being that the DEM hires and uses the services of Urban Forester Ernest DeRosa at the Field Experiment Station in Waltham. Ernie's normal functions include diagnostic and advisory services to municipalities, tree wardens, arborists, state land managers, and home owners. In addition to his day to day duties, Ernie has participated in several "special" projects.

He has been on the program for the Mass. Association of Tree Wardens meeting, and the Mass. Utilities and Arborists Conference. He has entered several Mass towns in the Tree City USA program. Tree City USA is a means of "showing off" our cities and towns which are committed to urban forestry. Ernie is a major force behind the training and continuing education courses for certification of Massachusetts Pesticide Applicators. Ernie represents the Commonwealth in the International Society of Arboriculture, and he is always involved in the New England-New York Urban Forestry Conference.

## FOREST RESOURCES PLANNING

The primary goal of the program is to prepare, implement and update a comprehensive forest resources plan for the Commonwealth. This plan will provide policy and program direction for the Division of Forests and Parks and also the Commonwealth's portion of the Federal Forest and Rangeland Renewable Resources Planning Act (RPA) efforts. The program is directed by Dr. Muriel E. More.

During FY 1985 considerable progress was made in the Forest Planning Program. The discussion draft of the state forest resources plan was completed and reviewed by numerous public and private agencies, organizations and individuals, the Massachusetts Forest Resources Advisory Committee and the DEM. At this time the plan is undergoing final copy revisions and will be printed this fall. After that the Advisory Committee will present the plan to the Director, Division of Forests and Parks, Commissioner, Department of Environmental Management and the Secretary, Executive Office of Environmental Affairs for formal acceptance and implementation. The plan makes forest resource policy and program recommendations based on an analysis of State forestry programs, current forestry legislation, six technical working group reports (covering issues and proposed solutions for the planning and management of state, municipal and privately owned forest land, forest industries, wood energy and forest protection) procured by the Advisory Committee, a status report on acid rain and four technical supply/demand assessments of the Commonwealth's major forest resources (timber, recreation, wildlife and water) prepared through the Forest Resources Planning Program. Major emphasis in the coming year will focus on implementing the plan through Division programs and encouraging other agencies and organizations to do likewise.



In other forest planning activities, Dr. More has continued to serve as the Division Coordinator for the Massachusetts Prime Timberlands Mapping Project. The Department of Forestry and Wildlife Management at the University of Massachusetts has been under contract to inventory and map seven counties covering 1,790,500 acres of commercial forest land utilizing a site classification system that estimates both hardwood and softwood potential productivity. The initial counties (Berkshire, Hampden, Hampshire, Franklin, Essex, Middlesex and Plymouth) have been completed and the University's final report was submitted in June to the Division of Forests and Parks and the U.S. Forest Service. Map products will be distributed to the Division's administrative regions in the near future and funding is currently being sought to complete the remaining counties in the state. In addition, Dr. More has been serving on the Natural Resources Planning Committee which is overseeing development of a five year Natural Resources Plan for Massachusetts under the auspices of the State Commission for Conservation of Soil, Water and Related Resources, organized a six state workshop sponsored by the U.S. Forest Service to provide an overview of the Implan input/output economic model and developed a proposal to study the economic impact of forest recreation on the State's economy.

Finally, Dr. More attended the twenty state Northeastern Forest Resources Planners Association Conference held in May in Milwaukee, Wisconsin and has been asked to serve on the Association's new standing committee which will focus on increasing state input into the Federal FPA planning process. Initial efforts will be directed to the 1989 Federal assessment of forest resources.

## INCOME

The forestry account derived income from several sources -- namely from federal grants, forest products sales from state lands, the issuance of timber harvester licenses, filing fees and leases/permits. These monies totalled \$733,262 for FY 1985.

The following is an analysis of the Bureau's receipts.

<u>State Lands and Service Forestry Income</u>	<u>Amount</u>
Timber Harvester Licenses	\$ 7,090
Forest Products Sales*	583,273
Chapter 61 Tax Law Filing Fees	16,835
Rents/Leases	8,904
	<hr/>
Sub-Total	\$ 616,012
 <u>Federal Income</u>	
U&CF (Urban & Community Forestry)	\$ 59,300
RC&D (Resource Conservation & Development)	0
RFA (M&U/Service Forestry/Tree Improvement)	24,960
FRP (Forest Resources Planning)	14,000
FIP (Forestry Incentives Program)	4,500
ACP - Technical Assistance	14,400
	<hr/>
Sub-Total	\$ 117,160
<u>TOTAL</u>	\$ 733,262

\* Includes several inter-agency sales with the Division of Fisheries & Wildlife under an agreed-upon cooperative management program, amounting to a "dollar equivalent" worth of \$24,803, and two harvests for "in-house" use of state parks.

A variety of factors affected the demand and prices for stumpage harvested from state lands, in particular the value of the U.S. dollar. During the past year, the U.S. dollar reached new highs in value relative to other major world currencies. This resulted in a continuing decline in the demand for red oak and other exportable species to other countries as its price in American dollars was too expensive. Thus, the supply of red oak logs and lumber surpassed the demand, which eventually brought lower prices at the stump offered to the landowners. The oversupply in wholesale yards was initially created by the high prices Europeans were offering for red oak in the late 1970's/early 1980's when the U.S. dollar was weaker. Demand was high, red oak increased greatly in value, and "everyone" wanted to sell this valuable wood growing in their woodlot.

The average value of fuelwood stumpage in state land sales dropped significantly from \$14/cord to about \$7/cord from FY 84 to FY 85. This could be attributed mainly to the declining demand for fuelwood, as conventional energy sources (oil, natural gas, electricity) levelled off in price, and are thus much easier to use. This trend points to the need for developing local industrial markets for wood energy, such as whole-tree chips.



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## FOREST RESOURCES PLANNING

The primary goal of the program is to prepare, implement and update a comprehensive forest resources plan for the Commonwealth. This plan will provide policy and program direction for the Division of Forests and Parks and also the Commonwealth's portion of the Federal Forest and Rangeland Renewable Resources Planning Act (RPA) efforts. The program is directed by Dr. Muriel E. More.

During FY 1985 considerable progress was made in the Forest Planning Program. The discussion draft of the state forest resources plan was completed and reviewed by numerous public and private agencies, organizations and individuals, the Massachusetts Forest Resources Advisory Committee and the DEM. At this time the plan is undergoing final copy revisions and will be printed this fall. After that the Advisory Committee will present the plan to the Director, Division of Forests and Parks, Commissioner, Department of Environmental Management and the Secretary, Executive Office of Environmental Affairs for formal acceptance and implementation. The plan makes forest resource policy and program recommendations based on an analysis of State forestry programs, current forestry legislation, six technical working group reports (covering issues and proposed solutions for the planning and management of state, municipal and privately owned forest land, forest industries, wood energy and forest protection) procured by the Advisory Committee, a status report on acid rain and four technical supply/demand assessments of the Commonwealth's major forest resources (timber, recreation, wildlife and water) prepared through the Forest Resources Planning Program. Major emphasis in the coming year will focus on implementing the plan through Division programs and encouraging other agencies and organizations to do likewise.

In other forest planning activities, Dr. More has continued to serve as the Division Coordinator for the Massachusetts Prime Timberlands Mapping Project. The Department of Forestry and Wildlife Management at the University of Massachusetts has been under contract to inventory and map seven counties covering 1,790,500 acres of commercial forest land utilizing a site classification system that estimates both hardwood and softwood potential productivity. The initial counties (Berkshire, Hampden, Hampshire, Franklin, Essex, Middlesex and Plymouth) have been completed and the University's final report was submitted in June to the Division of Forests and Parks and the U.S. Forest Service. Map products will be distributed to the Division's administrative regions in the near future and funding is currently being sought to complete the remaining counties in the state. In addition, Dr. More has been serving on the Natural Resources Planning Committee which is overseeing development of a five year Natural Resources Plan for Massachusetts under the auspices of the State Commission for Conservation of Soil, Water and Related Resources, organized a six state workshop sponsored by the U.S. Forest Service to provide an overview of the Implan input/output economic model and developed a proposal to study the economic impact of forest recreation on the State's economy.

Finally, Dr. More attended the twenty state Northeastern Forest Resources Planners Association Conference held in May in Milwaukee, Wisconsin and has been asked to serve on the Association's new standing committee which will focus on increasing state input into the Federal FPA planning process. Initial efforts will be directed to the 1989 Federal assessment of forest resources.





## INCOME

The forestry account derived income from several sources -- namely from federal grants, forest products sales from state lands, the issuance of timber harvester licenses, filing fees and leases/permits. These monies totalled \$733,262 for FY 1985.

The following is an analysis of the Bureau's receipts.

<u>State Lands and Service Forestry Income</u>	<u>Amount</u>
Timber Harvester Licenses	\$ 7,090
Forest Products Sales*	583,273
Chapter 61 Tax Law Filing Fees	16,835
Rents/Leases	8,904
	<hr/>
Sub-Total	\$ 616,012
 <u>Federal Income</u>	
U&CF (Urban & Community Forestry)	\$ 59,300
RC&D (Resource Conservation & Development)	0
RFA (M&U/Service Forestry/Tree Improvement)	24,960
FRP (Forest Resources Planning)	14,000
FIP (Forestry Incentives Program)	4,500
ACP - Technical Assistance	14,400
	<hr/>
Sub-Total	\$ 117,160
 <u>TOTAL</u>	 \$ 733,262

\* Includes several inter-agency sales with the Division of Fisheries & Wildlife under an agreed-upon cooperative management program, amounting to a "dollar equivalent" worth of \$24,803, and two harvests for "in-house" use of state parks.

A variety of factors affected the demand and prices for stumpage harvested from state lands, in particular the value of the U.S. dollar. During the past year, the U.S. dollar reached new highs in value relative to other major world currencies. This resulted in a continuing decline in the demand for red oak and other exportable species to other countries as its price in American dollars was too expensive. Thus, the supply of red oak logs and lumber surpassed the demand, which eventually brought lower prices at the stump offered to the landowners. The oversupply in wholesale yards was initially created by the high prices Europeans were offering for red oak in the late 1970's/early 1980's when the U.S. dollar was weaker. Demand was high, red oak increased greatly in value, and "everyone" wanted to sell this valuable wood growing in their woodlot.

The average value of fuelwood stumpage in state land sales dropped significantly from \$14/cord to about \$7/cord from FY 84 to FY 85. This could be attributed mainly to the declining demand for fuelwood, as conventional energy sources (oil, natural gas, electricity) levelled off in price, and are thus much easier to use. This trend points to the need for developing local industrial markets for wood energy, such as whole-tree chips.



ANNUAL REPORT

FISCAL YEAR 1985

BUREAU OF INSECT PEST CONTROL

CHARLES S. HOOD - CHIEF

1. SUMMARY of CONDITIONS FY'85

During the past few years and up to and including FY'85, oak species in both the black and white groups have sustained a considerable amount of damage from forest insect pests and climatic conditions. The oak leaf-tier complex of insects has killed thousands of red oak in Eastern Franklin County and is now exhibiting outbreak conditions in Bristol and Norfolk Counties. An aerial survey conducted in June of this year indicates an increase in both extent and severity of the complex in Southeastern Massachusetts.

Following the most severe and widespread outbreak of gypsy moths ever experienced in the one hundred and sixteen years that it has been present in Massachusetts it was confidently expected to collapse to insignificant numbers in the years immediately following. Such has not been the case. Although affected acreage has decreased considerable since 1981, down to 217,500 acres in 1983, it showed an increase to 308,599 acres in 1984 and, if all indications prove true, that acreage will double in 1985. The oak species continue to be damaged in as much as oak is the favored food of the gypsy moth. Mortality in oak is continuing across the state.

To compound the situation even further, oak in some parts of the State were hit by frost in the late spring of 1985 during a crucial time in bud development and lost the first flush of leaves.

Another oak problem is the recent buildup in the Southern Connecticut Valley and east to Worcester County of a small moth called the oak leaf skeletonizer, Bucculatrix ainsliella. Feeding became noticeable in June.

Finally, 1985 has seen an increase in a complex of leaf rollers apparently working in conjunction with the leaftier complex in Southeastern Massachusetts. The major species in this complex is *Archips semifervans*. Oak foliage is its favored food.

Sugar maples planted years ago as shade trees along many of our city and towns streets are continuing in a state of decline. Once decline starts in maple, it appears to be irreversible resulting in necessary removal and subsequent cost to cities and towns.

At the request of the U.S. Forest Service a survey was conducted during FY'85 to confirm the suggested presence of an aphid, *Pineaus boernerii*, known to severely damage red pine. Following considerable effort by Bureau personnel the insect and the extent of its present range in Massachusetts was determined. The subject will be covered more fully later in this report.

## 2. GYPSY MOTH DEFOLIATION FY '85

The annual aerial survey to detect current gypsy moth defoliation was conducted in early July of 1984. A total of 25.5 hours of flying time was required to complete the survey (Map A). What was suspected during the larval feeding period proved true. Total acreage showing visible defoliation was 308,599 an increase over the previous year. Experience and past history of the gypsy moth in Massachusetts would tell us that this shouldn't happen so soon after a major outbreak.

One theory advanced is that the 1981 outbreak was so severe and extensive that in certain locations populations of the moth died of starvation before the normal buildup of the nucleopolyhedrosis virus could occur. This would have left the surviving population relatively free of the disease thus allowing the survivors to quickly build again to epidemic proportions. For whatever reason, the fact remains that populations of the pest are again on the increase in the southern central region of the state.

The rise in gypsy moth populations on Cape Cod has to be viewed in a different light. Here the gypsy moth populations rise and fall independently of the rest of the state. In 1981 when almost every susceptible area of Massachusetts was severely attacked by the pest, Barnstable and Plymouth Counties were relatively free of the moth. Since that time, however there has been a steady population increase.

### 3. CONTROL PROGRAMS

Anticipating severe problems in 1985, a request was made to the Legislature to include a sum of money in the Supplemental Budget for the purpose of reimbursing communities for 50% of their costs for gypsy moth control and to allow the Department to spray certain of our recreation areas. A sum of \$400,000 was appropriated. The result was that 12 communities sprayed with *Bacillus thuringiensis* and became eligible for reimbursement and received the amount listed below:

Webster	-	\$17,411.00	Northbridge	-	\$11,988.18
Westborough	-	\$9,126.32	Mendon	-	\$13,999.60
Uxbridge	-	\$24,779.93	Millville	-	\$5,000.04
Holliston	-	\$23,967.06	Milford	-	\$36,876.43
Holden	-	\$1,054.48	Taunton	-	\$427.73
Falmouth	-	\$6,971.06	Blackstone	-	\$18,861.25

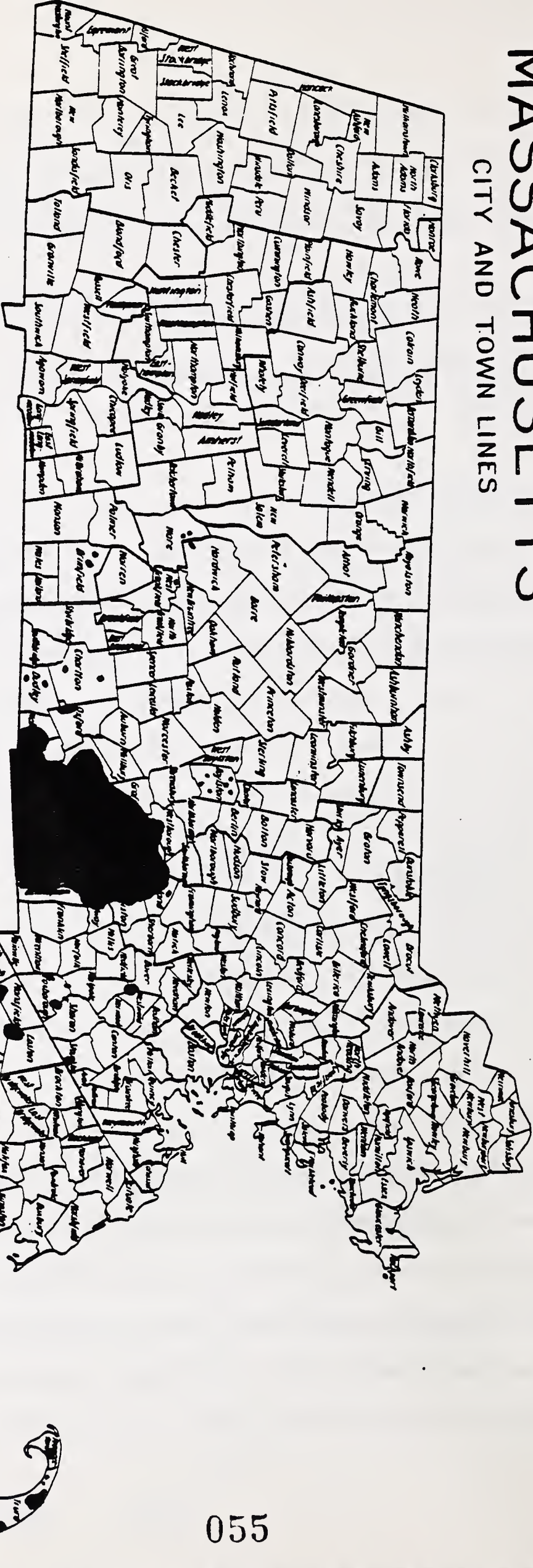
The cost for reimbursing the above communities totalled \$160,463.08

On the morning of May 29, 1985 Bureau personnel began directing an aerial spray program which eventually included parts of Ashland State Park, Hopkinton State Park, Upton State Forest, Purgatory State Reservation, Douglas State Park, Shawme Crowell State Park and Nickerson State Park. *Bacillus thuringiensis* was applied by helicopter at the rate of 20 Billion International Units (B.I.U.). The contractor was AgRotors, Inc. of Gettysburg, Pennsylvania. Due to the lateness of our start the strength of the spray material was increased from the originally planned 16 B.I.U. to 20 B.I.U.



# MASSACHUSETTS

## CITY AND TOWN LINES



GYPSY MOTH DEFOLIATION

1984

308,599 A

055



The park spray was supervised and coordinated by Charlie Burnham with the help of Russ Larson, Paul Perodeau and Dick Kelliher. Invaluable assistance was also supplied by Rutland and Stow tree crews. A total of 4,797 acres were sprayed at a cost of \$56,268.81 or \$11.73 per acre.

Typical of B.t. spray programs to control the gypsy moth the results in both the community programs and our park were erratic. This can be illustrated by excerpts taken from reports concerning the spray projects submitted to this office:

"Favorable comments regarding control from the local superintendent of Mendon. Visual inspection showed much defoliation (50%-65%) but feeding activity was slowed appreciably."

"Does not have the ability to accomplish high percentage mortality in extreme populations."

"It is the feeling of the superintendent of insect pest control in Holden that the result of spraying with B.t. is not worth the results gained."

Concerning the spraying by the Town of Hopkinton. "I (Paul Perodeau) looked at trees with the amount of egg masses should have been 100% defoliated yet the foliage looked very good. The people I talked to were very satisfied with the results."

"The poor or erratic control exhibited throughout the sprayed areas indicate a single application is not appropriate to justify the expenditure involved, as where a double application, which exhibited better control, would become cost prohibitive and will result in a questionable cost to benefit ratio,"

#### 4. COOPERATIVE STUDIES

For the past several years studies have been conducted, at our request, by the Entomology Department at the University of Massachusetts relative to the gypsy moth. Much of the raw, field data involved in these studies has been supplied by Bureau personnel. This work up through 1985 is summarized as follows:



Although a well defined IPM (integrated pest management) program for gypsy moth has not been developed, the research over the past few years has led to some useful techniques that can be used in gypsy moth management. *Bacillus thuringiensis* (B.t.) is still the recommended method to reduce larval densities. Treatment decisions should in part take into account the understanding that we currently have of B.t./virus interactions. In this regard, egg mass virus load estimates can be used to evaluate natural levels of virus and to predict crashes. Further, populations that are clean (of virus) and have been observed to be on the increase should be considered for treatment even though the levels have not yet reached defoliating levels. The compatibility of B.t. and parasites may be quite useful although no long term studies have attempted to document this.

Work continues in our effort to develop an early warning system which will allow us to predict the early start of a gypsy moth outbreak. The deployment of pheromone traps to attract and capture male gypsy moths and the attachment of burlap bands on the trunks of 20 trees in strategic spots across the state will allow us to carefully monitor low gypsy moth populations.

It now appears that the counts of egg masses under the burlap bands are a reliable predictor of next years defoliation at any given site but the traps still need adjusting to accomodate the numbers of male moths. The problem is that they are extremely attractive and fill up quickly. Reducing the number and size of the entrance ports appears to be the answer.

The reliability of this predictive tool should improve when we are able to reduce the numbers of captured male moths to manageable numbers. When that goal has been attained early signs of an impending outbreak should be easily recognizable.

##### 5. PARASITES and PREDATORS

Collections of the important predator of the Gypsy Moth, Calasoma sycho-phanta, were made in Sutton, Wrentham, Rehobeth and Hudson for release as a starter colony on Cape Cod.



The release was made by District Supervisor Kelliher in an infestation in Falmouth where Calasoma has not been reported for many years. This release was made in June 1985. Monitoring of the site will take place in late spring and early summer of 1986 to determine if this attempt was successful.

Following the same format as in the past several years, Gypsy Moth egg masses parasitized by Anastatus disparis were field collected for future release in areas where the parasite is not known to be established. After the hatch and disposal of the caterpillars these egg masses were placed in infestations to allow natural emergence of the parasite which in turn will attack the newly laid egg masses of the Gypsy Moth. Egg masses were collected in Sutton, Upton and Wrentham in the fall of 1984 and evaluated by parasite emergence to determine the optimum collection site for the following spring. Purgatory Chasm in Sutton was the major collection site chosen. A total of 3,655 parasitized egg masses were collected.

To extend the parasite emergence period and to offset local weather conditions one half of the egg masses were refrigerated an additional three weeks. The masses were divided and given to the district supervisors in Berkshire County and on Cape Cod for placement in infested areas. Eighteen sites in the Berkshires and seventeen sites on Cape Cod received 1,900 and 1,700 parasitized egg masses respectively. The average emergence of the adult Anastatus was 67 per mass or 241,200. Egg masses will be collected from these sites in the fall of 1985 and evaluated at the Stow facility for the presence of the Anastatus.

In the fall of 1984 egg masses were collected from six of the eight release sites on Cape Cod. No masses were available for collection from two sites. Anastatus did emerge from the masses collected at the other six sites. In Berkshire County no emergence took place from any of the egg masses collected. This program will be continued in 85-86. More emphasis will be placed on Berkshire County in the coming year.

## 6. MORTALITY STUDY

The monitoring program for determining the mortality of host trees for the Gypsy Moth again showed a slight increase over the previous year.

<u>District</u>	<u>#Trees</u>	1982 #Dead	%	1983 #Dead	%	1984 #Dead	%	
1-20 plots	969	140	15.5	149	15.4	166	17.1	
2-14 "	1158	212	18.4	248	21.4	227	23.4	(10 plots 973 trees in 1984)
3-11 "	417	20	4.8	21	5.0	21	5.0	
4-10 "	341	41	12.0	67	19.6	79	24.8	
5-11 "	405	57	14.1	67	16.5	85	21.0	
6-12 "	356	29	8.2	34	9.6	35	10.4	(11 plots 337 trees in 1984)
7-20 "	739	109	14.8	117	15.7	124	16.8	
8-14 "	137	25	18.2	27	19.7	27	19.7	

In district two and district six five plots were lost due to construction. Data excludes plots in eastern Franklin county where the oak leaf tier complex infestation was heavy for several years. The mortality in that infestation has an average of 28.7% on red oak. On the plots established statewide subject to other defoliators the average is 17.3% mortality.

## 7. OAK LEAF TIER - ROLLER COMPLEX

The fall of 1984 sampling of red oaks in Franklin County and subsequent counting of the eggs by use of a microscope indicated the complex was increasing in Warwick and in Wendell. Additional samples were taken in Warwick and each indicated visible defoliation would occur in the spring of 1985. The aerial survey conducted on 6/19/85 showed defoliation in the towns of Northfield, Warwick, Wendell, Erving, Orange and Royalston for a total of 3,360 acres. The tier feeds mainly in the upper crown in lighter infestations making the injury more easily seen from the air than by ground survey.

A more perplexing situation exists on the south shore including most of Bristol and Norfolk Counties.

The aerial survey of 6/19/85 showed 355, 125 acres of defoliation in this general area. Immediate ground survey showed proper delineation of the defoliated areas and that the tier - roller complex and the gypsy moth co-existed in all areas to varying degrees. Following the ground survey and discussion with the past and present district supervisors it was estimated that the gypsy moth caused more than fifty percent of the defoliation on 173,281 acres in this area and the tier-roller caused more than fifty percent of the defoliation on the remaining 181,844 acres (Map B). A leaf roller tentatively identified as *Archips semififeranus* (Walker) caused much defoliation and now should be considered as an equal to the oak leaf tier in the complex.

The area to be sampled and the number of sites will again be increased in the fall of 1985 to better predict the extent and severity of this problem.

As a result of egg surveys and laboratory analysis conducted in 1984 it was predicted that the extent and severity of oak leaftier would increase in Bristol and Norfolk Counties in 1985. Much of this area was also infested with gypsy moth. In order to clarify this situation, information concerning the subject was sent to the cities and towns in the area as well as foresters and others who might be concerned (See appendix and Map E).

#### 8. RED PINE ADELGID SURVEY and EVALUATION

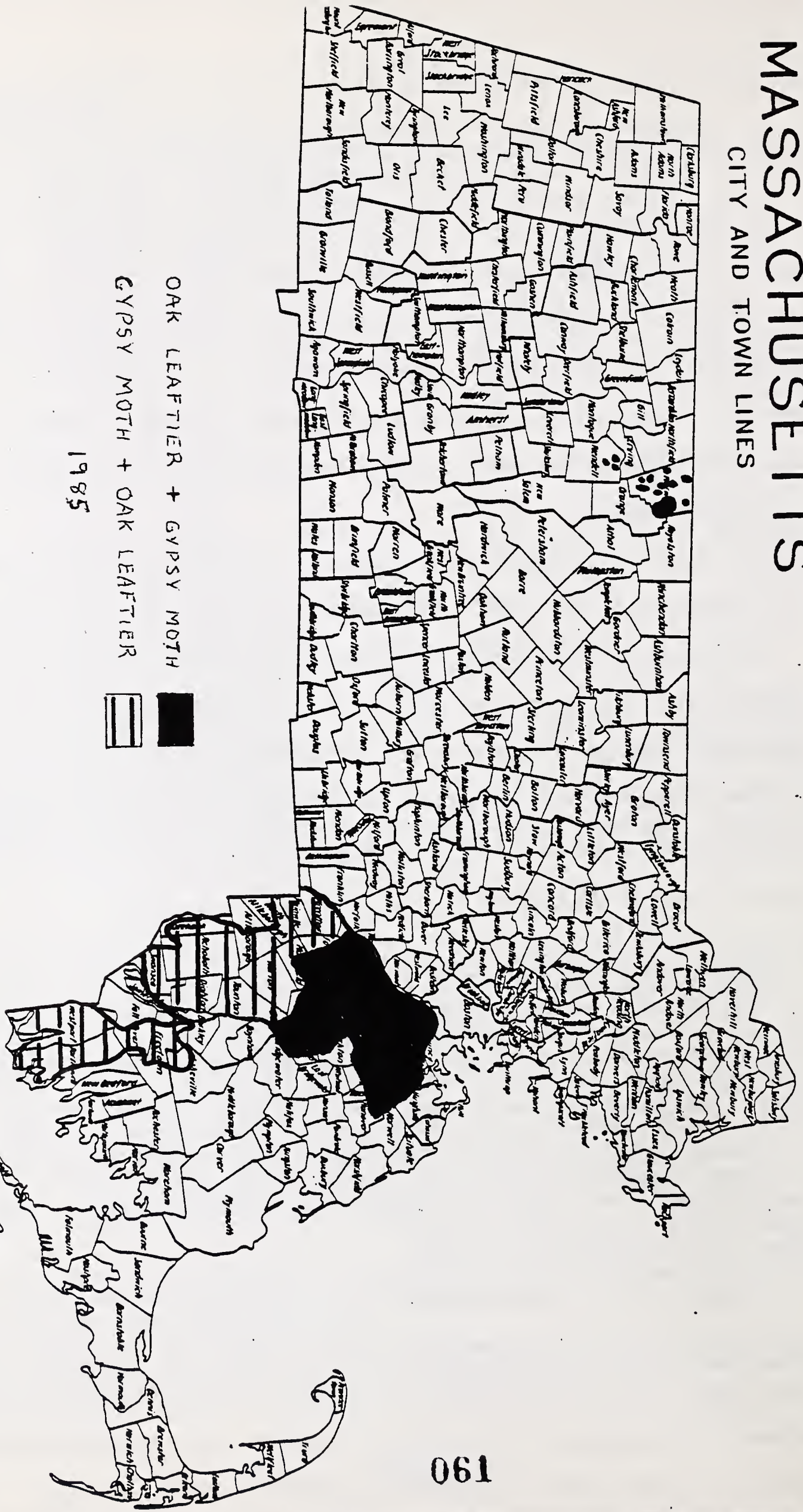
The red pine adelgid, *Pineus Boernerii* was the subject of a cooperative detection survey and evaluation with the U.S. Forest Service office in Durham, New Hampshire. The reason for the concern being that the infestation is spreading toward the natural range of red pine. The purpose of the survey was to delineate the leading edge of the infestation which bordered the Rhode Island - Connecticut state lines in the Commonwealth in 1980.

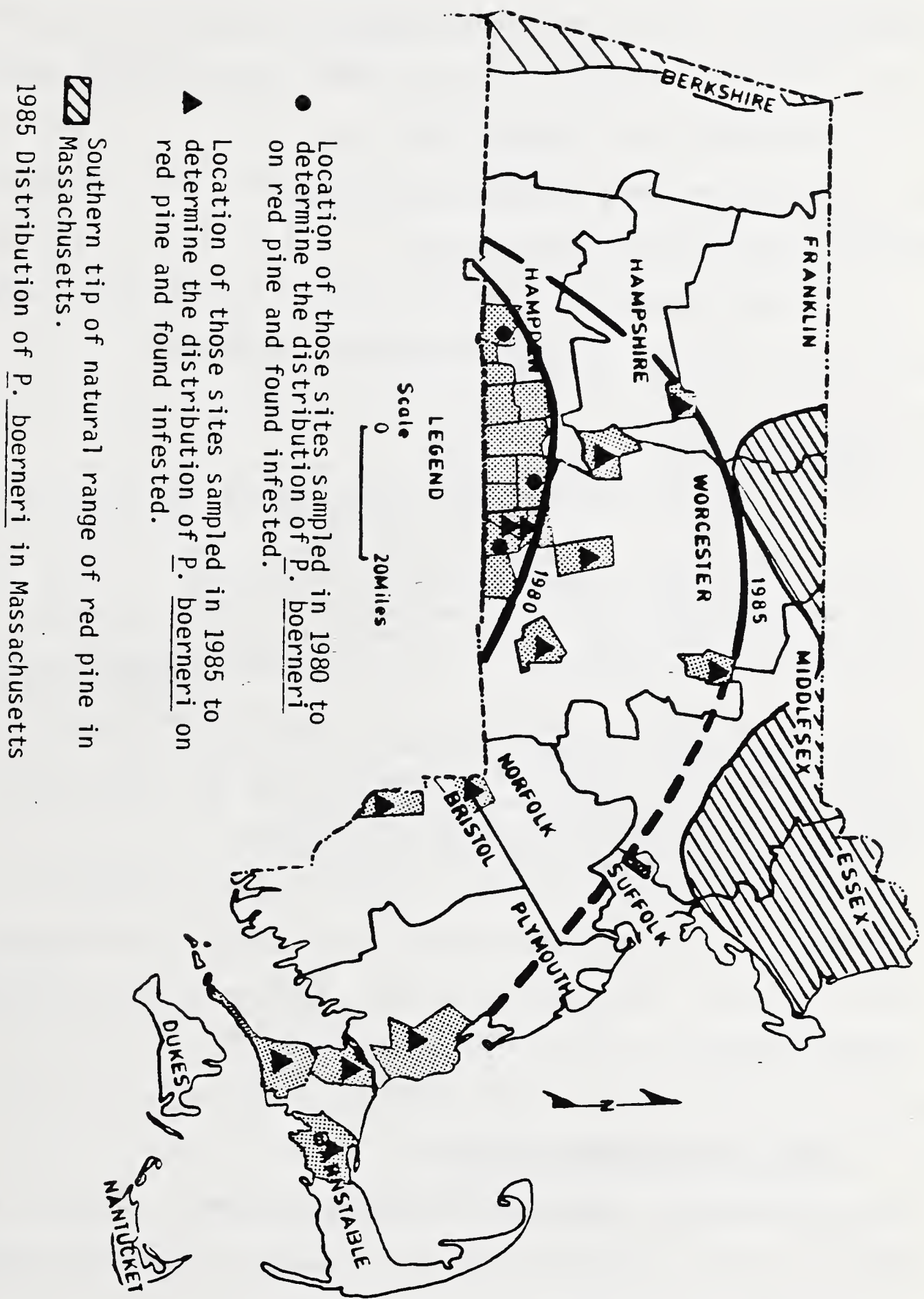
Fifty nine states were sampled out of a potential 94 site grid. Four branches from each of five trees at each site were collected. At the Stow facility, fifty bark flakes from three year wood were removed and examined under a microscope to determine the presence of any scale or adelgids. Specimens were counted and placed in seventy percent alcohol for delivery to U.S.F.S. Durham.



# MASSACHUSETTS

## CITY AND TOWN LINES







Fourteen sites were confirmed as having the adelgid Pineus boernerii. Many of the sites had heavy infestation of another adelgid, Pineus coloradensis, an innocuous pest of red pine. Pineus boernerii was found in samples from Ware, Shutebury, Lancaster, Sturbridge, Spencer, Sutton, North Attleboro, Seekonk, Plymouth, Bourne, Falmouth, and Barnstable (Map C).

The red pine scale, Matsucoccus resinosae, was also a subject of this survey. No specimens of this pest were found.

Sixty four and one half days were spent in collection of samples and forty six days in specimen collection and delivery to Durham.

#### 9. BROWN TAIL MOTH

This insect was accidentally introduced into the United States about 100 years ago. It soon spread over much of the Northeast. Over the years, however, its range has diminished until it is now present in only the Casco Bay area of Maine and Cape Cod in Massachusetts. In the belief that endangered Lepidoptera may be harmed National Seashore authorities have made the decision not to spray to control the brown tail moth. This is unfortunate in that the major outbreak area in the United States is within the confines of the park.

Of concern to people living or visiting either in the park or in nearby communities is the fact that contact with the caterpillars can cause a severe rash due to the hairs. Twenty to twenty five cases were reported to medical authorities during FY 1985.

#### 10. EXCERPTS FROM DISTRICT REPORTS

From District 1 - Nantucket pine tip moth heavy in Falmouth, Yarmouth, Dennis, Eastham and Truro. Defoliation by fall cankerworm on Nantucket. Eastern tent caterpillar very heavy over the entire district.



From District 2 - Oak leaftier defoliation was very noticeable throughout Bristol and Norfolk Counties.

From District 3 - In general the overall conditions of the forests and shade trees look good. No infestation of gypsy moth could be found. Maple decline is widespread throughout many cities and towns.

From District 4 - Oak leaf skeletonizer appears to be increasing.

From District 5 - Mortality rates from reported gypsy moth defoliation continues to escalate in oak stands. The most dramatic losses occurred in Douglas State Forest, Purgatory State Reservation and Spencer State Forest.

From District 6 - The maple trees and the ash trees are very much in decline. The oak trees are still drying back from the top and we are still losing many of these trees in our forest and park areas. We cannot keep up with the pruning of deadwood out of the tops of these trees.

From District 7 - Oak leaftier skeletonizer appears heavy throughout the district. The horticultural unit at Amherst was assisted for seven days by the tree crew digging shrubs.

From District 8 - Fall webworm, Cheshire, Lanesboro, Adams, very heavy; springy elm caterpillar, Mt. Greylock summit and campground, moderate; mountain ash sawfly, Mt. Greylock and New Ashford, heavy; ash dieback County wide and serious.

#### 11. TREE CREWS

It was noted in the 1984 Annual Report that a serious condition existed on our parks and recreation areas. A survey conducted during that year indicated a total of 2,369 trees were in need of pruning to remove hazardous limbs. The survey also indicated a total of 997 trees, either dead or dying, that needed to be completely removed.

Along with other duties assigned to them, the crews began to concentrate on these problem trees. Despite the fact that they are under-staffed the tree crews removed a total of 1839 trees on Department property.

Included in this total were many of the hazardous trees in the immediate vicinity of the intensively used recreation areas, power line clearance, site preparations and logging jobs.

In the latter part of the year a natural disaster struck the Town of Warren and to a lesser degree the Town of Ware. A sudden windstorm closely resembling a tornado moved quickly through these communities. Many trees were uprooted and snapped off. The Department immediately responded with personnel and equipment. The Bureau tree crews and specialized equipment played a major role in the clean ups. A total of seven days were required to complete the job.

Another important function performed by the tree crew personnel was that of assisting communities in their aerial spray projects. This work included monitoring, marking spray boundaries, assisting at loading areas, etc. This activity included early rising and long hours.

## 12. PERSONNEL CHANGES

F.Y. '85 saw a number of personnel changes within the Bureau. Most of the changes came about as a result of the retirement after 32 years of service of Ed Lalli. Ed was District Supervisor covering Hampton and Hampshire Counties. Charlie Burnham laterally transferred from District 4 to the vacant district. Paul Perodeau then transferred from District 2, Bristol and Norfolk Counties, to District 4. Joe Lokitus, then Foreman for the Foxboro tree crew, moved into the vacancy created by Paul's move. Richard Beaudet, tree climber on the Foxboro crew, then moved into the vacancy created by Joe's move. An attempt is now being made to find a tree climber candidate to fill behind Beaudet.

We were very fortunate to being able to partially fill the Berkshire crew which for a time had no personnel. During this year we were able to obtain the services of Ken Gooch as foreman and Tim Zelazo as tree climber. They are both excellent additions to the Bureau.

ANNUAL REPORT

1985

BUREAU OF FIRE CONTROL

CHIEF FIRE WARDEN - ANTONIO CASTRO

ASSISTANT CHIEF FIRE WARDEN - PATSY G. BISCEGLIA

INTRDUCTION

In F.Y. '85 the bureau experienced one of its busiest Fall and Spring fire seasons in recent memory.

The summer drought which extended into the late months of 1984 contributed to the increase in the number of fires and increased calls for assistance from area fire departments. There were two major fires during this period one in the town of Monson in Hampden County and one on October Mountain, in the Berkshires.

In both instances the Army National Guard supplied water drops and did yeoman-service in containing these fires.

The October Mountain fire was noteworthy in that the aerial observer who was asked to leave this Connecticut Valley flight pattern to evaluate the fire for District Fire Warden Messer crashed. He survived and was able to walk away and direct rescuer's to this location.

The lack of precipitation continued throughout early 1985 and contributed to an extremely early and busy Spring fire season.

All areas of the state experienced more fires some of which were more difficult to extinguish due to their deep burning characteristics caused by the low water table that left the forest floor devoid of moisture. (See charts for fire trends)



The Bureau has maintained a positive posture throughout the year in all phases of its responsibilities. It has spearheaded the Safety Committee and is in the forefront in the implementation of the Right To Know Law.

Safety Committees continue to meet monthly to resolve safety problems in their respective areas. Rollover money has been allotted to each Region's committee to enhance employee safety in the workplace.

Fred Heyworth, IPC Supervisor, has provided a chainsaw safety program which will be duplicated for each region.

The Right to Know Law has been implemented throughout the Division of Forests and Parks. The mandatory workplace notices have been distributed and are in place. Each region was visited by an instructor from the Massachusetts Fire Fighting Academy who explained the law and the employees rights under the law to receive information about the chemicals used in the worksite. Material Safety Data Sheets listing the pertinent information of the chemical has been placed on file at each regional office. The Safety Committee Chairman has the responsibility for maintaining the file.

#### FY' 85 PROGRAM REPORT

##### 1. FEDERAL EXCESS PROPERTY PROGRAM

. The Federal government authorized the Department of Agriculture through the United States Forest Service to enter into an agreement with the Commonwealth of Massachusetts and its designee, the Department of Environmental Management, Bureau of Fire Control, to administer the Excess Property "Pass Through" Program. This program has generated a tremendous amount of interest from the rural fire communities in the Commonwealth.

Since the inception of the program in November of 1980, 161 rural communities have entered into agreements with the Bureau of Fire Control to accept federal excess property under the terms set forth by the U.S. Forest Fire Service, the General Service Administration, and the Massachusetts Bureau of Fire Control. This reflects an increase of 13 communities from fiscal 1984.

In fiscal 1985 excess property from the federal government was in heavy demand by the rural fire communities to every county. Communities who acquired property put a tremendous amount of effort in rehabilitating the same. Tank trucks, fire trucks, pick-up trucks and generators were beyond many small communities economic goals. These same pieces of property could not be purchased new.

By aquisition through the "Pass Through" Program many communities were able to fulfill the fire protection needs that citizens demanded at no cost to the particular town.

The towns receiving property in fiscal 1985 are as follows:

<u>Rural Fire Community</u>	<u>Excess Property</u>	<u>Dollar Value</u>
Belchertown	Diesal Generator	\$6,008.00
Rehoboth	Gas Generator	2,385.00
Uxbridge	5,000 gal. truck tractor tanker	34,802.00
Milford	" "	34,802.00
Yarmouth	Oshkosh Air Field Truck Plow	40,209.00
Middlefield	1,000 Gal. Tank Truck	4,000.00
Athol	pick-up truck	2,500.00
Holden	24,000 Gal. Tank Truck	55,421.00
Hawley	Fire Truck 1965 Int. Harv.	11,500.00

<u>Rural Fire Community</u>	<u>Excess Property</u>	<u>Dollar Value</u>
Dighton	Air Compressor	\$2,500.00
Ludlow	Xerox Copier	23,959.00
Orange	4 dr. Plymouth Sedan	7,284.00

Over 100 communities received many items of excess property this past fiscal year. Desks, chairs, filing cabinets, book cases, storage cabinets, typewriters, vacuum cleaners, fire protective clothing, shop equipment and small tools were many items in demand by small communities. The approximate dollar of all excess property transfered to RFD's in fiscal 1985 totaled \$310,870. Since the inception of the "Pass Through Program" in 1981 a dollar value of \$1,051,151 in excess federal property was transfered to the rural fire communities of the Commonwealth.

Items of excess property transfered to the 5 regions under the auspices of the Division of Forests & Parks were as follows:

<u>Region</u>	<u>Excess Property Dollar Value</u>
I	\$54,485.00
II	12,197.00
III	15,573.00
IV	12,155.00
V	7,650.00

This past fiscal year the Bureau screened and acquired \$477,184.00 dollars worth of federal excess property that was transfered to rural fire communities and to the five regions under the Division of Forests and Parks.



The Bureau has administered the Excess Property Program since the 1960's when the U.S. Forest Service enabled the states to use their high federal priority to acquire property that would improve the state's fire protection capabilities.

The present dollar value of the Excess Property Inventory is \$2,734.856.00 an increase of \$477,184.00 from fiscal 84.

## 2. PREVENTION PROGRAMS

The Bureau of Fire Control personnel receive many requests to visit elementary schools throughout the year. With Smokey in attendance, our personnel presented many seminars pertaining to fire prevention at a most critical state of their inquisitive life.

Smokey has played a major role reducing forest fires over the past 42 years. In 1942 more than 10 million acres of our woodlands was burned or destroyed. In 1983 only 3 million acres were reported burned. This was a savings to the American people of over 20 billion dollars.

In Fiscal 1985, 617 Smokey Prevention Programs were administered in every Bureau district in the state. We were able to reach approximately 18,510 young elementary school children. We disseminated over \$7,000 dollars worth of Smokey Bear Prevention material. Our programs were also administered to older citizens at parades and community functions. Smokey also made appearances at the Franklin County Fair Parade and Conway Fall Festival Parade.

### Big "E" - Smokey the Bear Participation

Bureau personnel were present throughout the two week period for Smokey's scheduled appearances at the department's fine display.

Another important prevention program is the issuing of criminal citations and warnings to individuals in violation of the Massachusetts Forest Fire Rules and Regulations and M.G.L. Chapter 132 pertaining to Forest Cutting Practices. We issued 454 citations and warnings in Fiscal 1985. This was an increase of 90 warnings and citations over Fiscal 1984. District 10 in Hampshire County issued 198 Chapter 132 violation warnings and 14 fire law violation warnings.

The inspection of logging operations takes up a great deal of the District Fire Warden's and Forest Fire Patrolman's work day. The new Forest Cutting Practices Law has increased the responsibility of these key personnel. In Fiscal 1984, we had 1,876 logging operations. This past fiscal year we inspected 2,793 sites. This increase of 917 inspections reflect the active role the Bureau is playing to insure that the letter of the law is followed on Commonwealth and Private landowner woodlots. Fire District 12 experienced 599 logging inspections this fiscal year. The inspection system serves a two-fold purpose; it establishes uniform fire minimizing standards with loggers, and it familiarizes our fire personnel with fuel conditions and terrain they might not ordinarily be aware of.

The Bureau continues to periodically distribute fire prevention and training materials to the Fire Districts for integration into their programs.

Committees have been formed to coordinate the various responsibilities of the Bureau. They include: Training, Prevention, Federal Excess Property, Weather, Communication, Inventories, Reports, Equipment, Law Enforcement, Safety, Supplies and Uniforms.

The Bureau also plays a very important role in fire prevention during the annual Fire Prevention Week in October. Many rural fire communities request our assistance during this period.

#### SMOKEY BEAR POSTER CONTEST

Each year the Bureau of Fire Control in conjunction with the Garden Club Federation of Massachusetts conducts a Smokey Bear Poster Contest with the Cooperation of the Massachusetts Department of Education. School children in kindergarten through junior high grades are eligible to compete for the State award, Regional award and National award. We honor 6 state winners each year. Massachusetts had the distinction of having 3 entries gain Regional honors and Mrs. Beulah DiPoli from Needham also achieved the highest honor in the Senior Citizen category by winning the National honor with her Smokey prevention poster.

On May 1, 1985 Governor Dukakis honored the poster winners and their families in the Governor's office with a citation of Merit from the State of Massachusetts.

This annual visit with the governor has proven very popular in Promoting the Bureau's Smokey Bear Program.



### 3. PRESCRIBED BURN

In March of 1985, the Bureau of Fire Control assisted with the prescribed burn at the Camp Edward Impact Range. The fire personnel from Region I and other Division of Forests and Parks personnel manned the fire equipment at the scene. The area burned consisted of 850 acres that were not burned in the 1984 burn when time constraints and weather conditions precluded burning of the original 1,300 acres that were targeted at that time.

This was the second year the Bureau was able to control burn the impact range, which for many years has been a suppression problem for both the Bureau and area rural fire communities. Prescribed burns during the early spring when weather conditions and wind conditions are favorable to this operation has benefited all fire suppression personnel in the area.

### 4. PREVENTION AND TRAINING

The training of Bureau personnel is an ongoing program within the individual fire districts to sharpen the skills and improve the fire behavior knowledge of the year-round and seasonal personnel. Training sessions have also been conducted inter-district to familiarize personnel with specialized equipment, fuel load and/or topographic characteristics that may vary from one district to another. This past fiscal year the Bureau had 672 in-house training sessions and 336 training sessions with other bureau and rural fire districts.

Statewide training was instituted for Division personnel to qualify them as inter and intra state fire fighting crews. Instructors were drawn from the Department's branches utilizing their expertise wherever called for in the lesson plans of the Basic Firefighter and Fire Behavior courses.

The Bureau of Fire Control in conjunction with the United States Forest Fire Service and its Northeast neighbors attended various conferences, seminars and training sessions during this past fiscal year.

5. NORTHEASTERN FOREST FIRE PROTECTION COMMISSION (Compact)

The Northeastern Forest Fire Protection Commission (COMPACT) is comprised of forest fire personnel from Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont, and the Provinces of Quebec and New Brunswick from neighboring Canada. This commissison is referred to as the "COMPACT". Whenever a wild forest fire rages uncontrolled and threatens to exceed resources of a member state, other member states are prepared to respond with fire personnel and fire apparatus to assist in the suppresssion of wild forest fires. Annual training exercises are held in February to instruct compact crews in the latest advances in forest fire control and how to react to emergencies.

The Northeastern Forest Fire Protection Commission training seminar was held in Concord, New Hampshire on February 4 through February 8. The theme of the meeting was "Forest Fire Investigation and Cause Determination". District Wardens Sakaske, Bennett, Messer, Faustino and Tirrell attended along with the Chief and Assistant Chief.

Compact Equipment Committee Meeting - Report by William Bennett

An Equipment Committee Meeting was held during the Winter Compact Training Session in Concord. We discussed the upcoming Pump School in Essex Junction. We also discussed the Water Handling course, planned for Mt. Mansfield in August. During the Pump School we held another meeting with people from the Equipment and Training Committee and Mr. Richard Mullavey, Director of the COMPACT Commission, to prepare training dates and sites.

The State of Maine hosted the Annual Equipment Meeting at the Maine Forest Service District Ranger Headquarters, Route 16, Oquossic, Maine on June 3, 4, and 5, 1985. All members and Mr. Mullavey were present.

#### FIRE SUPERVISOR'S CONFERENCE

The Northeastern Forest Fire Protection Fire Supervisor's Conference was hosted by the State of Massachusetts in Holyoke and Chicopee on July 31 through August 1, 1984. Training dates were established for COMPACT fire personnel for 1986 and 1987. Fire Supervisors met with the COMPACT equipment and training committees to formulate fire equipment meeting dates and water handling sites and dates.

#### 6. PRE-SUPPRESSION - CONSTRUCTION - MAINTENANCE PROGRAMS

Every fiscal year our maintenance reports show a considerable amount of dollar damage to our tower detection system by vandals. Fiscal year '85 was no exception. A considerable amount of man-hours and money was expended in the rehabilitation of destroyed tower structures and tower cabins. All Repair and construction work was performed in-house by our Fire Construction Maintenance Crew headquartered at Brimfield State Forest.

The following schedule indicates tower rehabilitation and preventive maintenance at many of the Bureau 's fire installations.



Goshen Tower - Hampshire County: New power lines and electrical service, rehabilitated cabin.

Savoy Tower - Berkshire County: Repairs completed after being vandalized.

Falmouth Tower - Barnstable County: Tower cabin razed. Replaced with new tower cabin.

Lancaster Field Office, N. Worcester County: Antenna and Radio installed.

Brimfield State Forest - Hamden County (Crew Headquarter): - Fabricating new tower cabins. Cutting lumber, constructing new files and storage bins.

Norwell Tower - Plymouth County: Installed new windows on tower cabin.

Freetown Tower - Bristol County: Tower structure painted.

Sandwich Tower - Barnstable County: Installed new roof.

West Brookfield Tower - S. Worcester County: Electrical repairs.

Erving S.F. Radio Tower - Franklin County: New weather instrument installed.

Sunderland Tower - Franklin County: New roof installed, windows caulked and added new flashing.

Shelburne Tower - Franklin County: Repaired power lines.

Ludlow Tower - Hamden County: Repaired vandalism on cabin and power lines.

Pelham Tower - Hampshire County: Installed antenna.

Monterey Tower - Berkshire County: Roof repairs on cabin.

Lenox Tower - Berkshire County: Flashing repairs on cabin roof.

The construction crew worked many man-hours in many state parks throughout the five regions. Included were power line construction, telephone line construction, refurbished Skinner Summit house, weatherization project at Brimfield, fabricating tower cabins at Brimfield, fabricating fireplace grates, constructed picnic tables at Warwick, wired hydraulic lift at electrical wiring projects at Erving S.P. and Carlisle Regional Headquarters and many other areas within the state.

The construction crew performed many specialized construction projects which enabled the Division to save thousands of dollars in labor if otherwise contracted out to private corporations.

The Bureau's fire personnel spent considerable manhours maintaining and servicing and constructing fire roads on state owned land. Over 232.5 miles of road work was performed during the off-fire season. Many manhours were spent dredging, cleaning and clearing many fire ponds and water holes.

This past recreation season the Bureau's fire personnel assisted many recreation sites in preparing for the summer recreation season. Many areas were unable to hire seasonal personnel until late into the season due to budgeting constraints. By the same token during the fire season the Bureau receives tremendous cooperation from the other Bureaus in fire control activities.

## 7. DETECTION

The detection system in Massachusetts is still provided by a combination of aerial observation and ground observation stations. In the counties east of Worcester County, ground observation stations are maintained and operated by the Commonwealth.

This system is backed up during periods of high fire danger in Plymouth and Barnstable Counties by county supported planes. In the western counties and including North Worcester County, a combination of ground observation and aerial observation is utilized and supported entirely by the state.

The flight pattern for DEM, Region III, South Worcester County, has been eliminated in order to increase the frequency of aerial detection flights over Northern Worcester County which has a high forest fire frequency. There were two additional towers manned in South Worcester County in order to shorten flight patterns. Flight pattern #3 limitations include West Boylston to Fitchburg, northwest to Royalston, and south to Hardwick, all in the Northern Worcester County area.

Flight pattern #4 in Franklin, Hampshire and Hampden Counties, DEM, Region IV, has been similarly condensed from an "A" type aerial flight pattern to a rectangular flight pattern. This extends from Russell in Hampden County north to Leyden in Franklin County, and proceeds south to Blandford in Hampden County.

Flight pattern #5 in Berkshire County, DEM, Region V remains the same as in the past. From New Marlboro, north to Clarksburg, northwest to Williamstown, it then proceeds south to Sheffield. On extreme fire danger days, a fourth flight pattern will be activated between Northern Worcester County and the existing flight pattern in Region IV. This in effect will give us the maximum forest wild fire protection for our woodlands.

We spend considerable time training fire tower observers to pinpoint the exact location of fires. This vital information is relayed to the rural fire dispatchers who in turn activates the suppression forces in their particular town.



The Bureau plays a very important role in assisting many small rural communities in all types of wild fire training. Immediate detection and response to incipient wild fires contribute to the reduction of acres burned and property lost.

In keeping with Director Bliss' request for sustained fire patrol activity, the Bureau's Forest Fire Patrolmen have logged a total of 616,570 miles. This reflects a mileage increase of 156,105 miles over Fiscal 1984. The Bureau's fire tower observers detected 3,662 fires which were reported to rural fire departments in their jurisdiction.

With 43 active fire towers and a statewide communication system, the Bureau is able to offer rural fire communities an invaluable asset in wildland fire fighting necessities.

#### MASSACHUSETTS FOREST FIRE COUNCIL

The Bureau has a very important role with the rural fire communities, forest wardens and fire chiefs of the Commonwealth who make up the Massachusetts Forest Fire Council. Quarterly, the Chief and Assistant Chief Fire Warden and thirteen District Fire Wardens attend these meetings.

A progress report of the Bureau's activities is presented to the Council by the Chief Fire Warden. The Bureau's function is to aid and respond to requests of the rural fire departments during wild fire emergencies.

#### 8. SUPPRESSION

The Bureau is mandated by law to assist rural fire communities in the suppression of wild fires. On many occasions during multi-alarm fires, our personnel not only assist in the suppression of wild fires but will also man fire stations to assist in dispatching fire information to other towns if the need arises.

Our fire tower detection system relays to the rural towns exact locations of fires detected which creates an immediate response situation to the emergency. This immediate response of fire apparatus to the scene minimizes the danger to lives and property.

#### Active Fire Season

October will long be remembered as one of our most active fall fire seasons in many years. Due to the forty days devoid of moisture, all the conditions for a dangerous fall fire season came into play. The two largest fires (Monson over 300 acres and October Mt. over 500 acres) took several days to extinguish. The use of Air National Guard helicopters in assisting the Bureau's suppression activities was a historic event. They proved very beneficial in suppressing wild fires inaccessible to normal ground fire fighting operations. Fire report critiques are attached to further explain the techniques the Bureau used in combating these wild fires.

The following fire statistics reflect the important role the Bureau plays in the overall scope of detecting and suppression of wild fires in the Commonwealth. Without the Bureau's professional fire fighting assistance to the many cities and towns in the Commonwealth the loss of valuable forest and timber products would be catastrophic. Other routine functions were also performed in conjunction with suppression activities.

	<u>October , 1984</u>
Fires detected by towers	436
Assistance to cities and towns	282
Acreage burned	1,987.25
Miles patrolled	51,194

## SPRING FIRE SEASON

Due to the low amount of precipitation that was experienced this past winter, our fall fire season carried right over to spring. Fire reports were being received in the radio room in Boston at an alarming rate by the third week in March.

On Sunday, March 24 numerous brush fire reports were being recorded by the Boston Radio Room. By Sunday evening, March 31, 906 fires were reported with an estimated 5,280 acres burned. This was one of the busiest fire weeks for the Bureau in over 20 years. The Deputy Chief Fire Warden assumed the position of Fire Information Officer, forest fire statistics were disseminated to the news media, D.E.M. Public Relations Bureau, and the Director of Forests and Parks. Our fire personnel in the field did a remarkable job in assisting rural fire communities and passing the fire information reports to the Boston Radio Room. The Radio Room did an excellent job in getting accurate fire information to the Fire Bureau and to the Director of Forests & Parks.

Some of the major fires in our Class "D" rating system, occurred in Milford, South Worcester County (100 acres plus), Peabody, Essex County (200 acres plus), Charlemont-Rowe, Franklin County (200 acres plus), Lynn, Saugus, Burlington, Middlesex County (300 acres plus). Other fires which could have created serious problems occurred in West Barnstable in Barnstable County, Ames Nowell S. P. in Abington, Plymouth County, Skinner S.P. in Hampshire County, Agawam in Hamden County, Blackstone Heritage S.P. in Northbridge, South Worcester County, Lincoln and Concord in Middlesex County, Swansea (25 acres) in which ignited 1,000 gallons of alcohol in which 60 acres of woodland



burned and over 3,000 people were evacuated from their houses, jobs and schools.

The highlight of that week was the detection system we incorporated in the state with our fire tower network. A large percentage of the fires which occurred in the state during that past week were reported to the RFD's by our tower observers. A most remarkable accomplishment.

The following is a report of forest fires by classes and total estimated acreage burned. Dollar damage has not been completed as of this report.

<u>Class Fires</u>	<u>From Sunday, March 24 to Sunday, March 31</u>	
	<u>Fires Reported</u>	<u>Acreage Burned (est.)</u>
A - $\frac{1}{4}$ acres and less	635	160
B - .26 acres to 9.9	235	1810
C - 10 acres to 99.9 acres	31	1860
D - 100 acres to 299.9 acres	5	1450
E - 300 acres to 999.9 acres	906	5280
F - 1000 to 4999.9 acres		
G - 5,000 acres or more		
	TOTAL FIRES REPORTED	TOTAL ACRES BURNED

The fire season continued into April and May without any signs of relief from atmospheric conditions. Ground fuel was extremely dry and ground fires were very hard to suppress. Precipitation for April was an all time low. Lack of moisture and windy days kept our fire personnel busy on our own forest lands and assisting the rural fire departments upon request. Fire Districts in Plymouth, Bristol, Norfolk, Essex, Middlesex, Hamden and Hampshire counties reported the largest amount of fires during the month of April. All fire personnel should be commended for performing their duties in a very professional manner.

FIRE ACTIVITY STATISTICSApril, 1985

Miles Patrolled	52,603
Fires Detected - Towers	1,568
Total Fires	2,607
Acreage Burned	4,692

Fires reported for April were 1,000 more than the previous month. Acreage lost was 2,483 less than the previous month. Immediate detection and quick response action and rapid suppression work by the RFD's and the Bureau personnel decreased acreage loss. Our towers detected and reported better than half the total fires which occurred throughout the Commonwealth.

Fires continued to burn into May.

May: Fires Reported - 1,177

Acreage Burned - 2,039

9. RURAL COMMUNITY FIRE PROTECTION

The Federal Rural Community Fire Protection Act provides additional funding to fire departments with the responsibility of protecting communities with a population of 10,000 or under. It is specifically designed to provide some additional financial assistance to these departments to increase their level of fire protection to the community. Prior to 1980 - 1981, this funding was traditionally utilized toward the maintenance and/or purchase of equipment or apparatus. However, since 1981 the emphasis has been directed toward training through an agreement with the Massachusetts Fire Academy.

The Massachusetts Fire Academy provides fire training for the 198 communities in the Commonwealth with populations under 10,000.

In FY 85 the Fire Academy conducted 79 programs in 105 communities with 1,575 students successfully completing the courses of instruction.

In addition, the Fire Academy has worked with the Bureau to develop a slide-tape training program dealing with wildfire suppression which will be used in-house and with municipal fire departments and divisional personnel.

The Federal (RFP & C) Rural Fire Prevention and Control Program (old CM-2) has changed the way funds are allocated to the states as a direct result of Congress's insistence that new approaches is needed for the distribution of federal funds.

Justification that a proposal is in the "national interest" or "assists the forest service achieve their goal" is the yardstick used to gain approval of state proposals.

Federal FY'85 is the last year for the Bureau's grant for an Assistant Chief Fire Warden and for federal grants as we have known them.



Fiscal Year 1985  
Annual Report  
Bureau of Urban Services  
Robert E. Freedman

Introduction

Fiscal Year 1985 was exciting for all persons involved with the Bureau of Urban Services. The Bureau was almost fully staffed and six Heritage Parks provided daily programming for the visiting public. Fall River, Gardner, Holyoke, Lawrence, Lowell, and Western Gateway Heritage Parks were either fully or partially operational by June 30th.

The Bureau assumed direct responsibility for the management of the Boston Harbor Islands State Park. This bustling and diverse park is looked upon as being a key transportation link to a number of future Heritage State Parks - Dorchester/Lower Mills, and Lynn, as well as continuing to provide the recreational services that island visitors have come to expect. This past year saw increased law enforcement protection through an agreement within the Metropolitan District Commission, and more dependable boat transportation.

Dunns Pond, a rural component of the Gardner Heritage State Park, was refilled with water thus making a beautiful natural area used by park staff to conduct nature walks and Jr. Ranger programs. Future programming includes: fishing, picnicking, ice skating, swimming, and boat rides.

Western Gateway Heritage State Park opened in the Spring of 85 in the restored North Adams Railroad Yard. This park along with rural Natural Bridge State Park experienced high attendance figures despite the fact that they were not fully staffed and the commercial buildings at Western Gateway were not yet open.

Natural Bridge State Park, after having extensive rehabilitation work (eg, comfort stations, picnic area, vehicle bridge), opened for the 1985 summer season and provided the public with a clean and peaceful area to enjoy a natural wonder.

### Expanded Bureau Staff

The Boston Office of the Bureau was completed with the hiring of a Senior Clerk, Administrative Assistant, and Assistant Chief. In addition to these positions, the Legislature approved the job titles of Horticulturist and Graphic Artist. Dawn Perry and Terri Talas, respectively, were hired to fill these positions and they are using the Lancaster Field Office as a base. Each of the "on-line" Heritage Parks also added at least one additional staff person.

### Park Visitation

With six Heritage Parks conducting programs the attendance figures increased dramatically. An ambitious promotional campaign in conjunction with the Department of Commerce and Development, helped to promote the parks and their programs.

Boston Harbor Islands and Pilgrim Memorial State Parks saw consistently high visitor numbers. This being the first year that the Annual Report uses Plymouth Rock attendance figures, a dramatic increase should be seen. For attendance figures, see Appendices in the Bureau of Recreation section.

### Buildings and Grounds

New equipment (tractors, lawn mowers, edgers, etc.) was purchased for each of the Heritage Parks from a Furnishings and Equipment Bond appropriation. These state-of-the-art products have proven to be extremely helpful in cutting down the number of hours required to perform various tasks, as well as increasing productivity for "Grounds" staff.

One goal of the Heritage Parks is to keep the Buildings and Grounds looking their very best. Pruned trees, manicured lawns, and full flower beds are eye-catching and pleasing thus helping to achieve our goal of well-maintained parks.





In order to assist each of the Heritage Park Building and Grounds Supervisors, a maintenance workshop was arranged to introduce them to some of the finer points of park maintenance. Professor Joseph Troll from U. Mass/Amherst, using slides, discussed the basics of turf/lawn care. Dawn Perry, Bureau Horticulturist, discussed flower bed preparation and care. Product representatives demonstrated the proper use of the new equipment purchased - including steam cleaners and one of its many uses will be to maintain hard (concrete, brick, etc) surfaces in the urban parks.

#### Park Planning/Exhibit Design

Planning and engineering teams were hired for the following future Heritage State Parks: Blackstone River and Canal; Dorchester/Lower Mills; Roxbury; and Turners Falls. Much progress has taken place over the year with preliminary design completed for some parks and actual acquisition in others.

Exhibit design at Gardner, Holyoke, Lawrence, and North Adams Heritage State Parks was in various stages throughout the year. All four parks hope to have their individual exhibits installed and operational in FY 86.

#### Park/Exhibit Openings

Parks which opened during FY 85 were: Gardner - Dunns area; Fall River; Lawrence - Pemberton Park; and Western Gateway (Natural Bridge).

Dunns Pond in Gardner was re-filled with water thus providing a beautiful setting just minutes from downtown. Though unable to be used for swimming or fishing due to construction, the picnic area, exercise equipment, and nature trail are enjoyed by many.

Fall River Heritage Park officially opened in August of 1984 with Governor Dukakis in attendance.

Pemberton Park in Lawrence is a peaceful and beautiful setting to enjoy a lunchtime concert or walk along the Merrimack River. This component of the Heritage Park was opened in FY 85 and quickly became a popular spot for local residents as well as a starting point for park tours.

Natural Bridge in North Adams, which became a component of the Western Gateway Heritage Park, opened to the public in the spring with upgraded toilet facilities, new picnic area, and interpretive programming.

Exhibits opened in Fall River and Lowell. The history of fabric making in Fall River and the use of water power in Lowell are the themes for these "permanent" exhibits which will enhance each park visitors stay.

#### Programs

A formal program planning system was implemented on a seasonal basis. Programming falls into two general categories: Recreational and Interpretive. Examples of each are: Kite festivals, magic shows, learning about rural forests and parks, living history, Junior Ranger program, walking tours, etc.

At Fall River and Lowell, the "learn-to-sail" program continued with more sailboats being added at both parks. Fall River's staff provided the sailing instruction and the "Friends of Fall River Heritage State Park" operated the paddleboat concession. In Lowell, the Greater Lowell Community Sailing Program provided sailing instruction and the University of Lowell conducted a public rowing program.

Private concessionaires operated excursion boats on the Taunton and Merrimack Rivers. These boats provided narrated tours explaining the history of Fall River and Lowell and how these rivers played a part in each city's development.

### Future Initiatives

The FY 86 Expansion budget has a request for an Urban Forester position as well as funding for a Recreation and Technical Assistance Program. Both requests, if funded, will assist communities with the maintenance and management of Municipal Recreation Programs. Management responsibility will be within the Bureau of Urban Services.

The Heritage Parks continue to grow with new parks in the planning stages and existing parks being completed. In order for these parks to succeed, programming and the physical site must meet a high standard of quality. Therefore, on-going workshops for Visitor Services and Maintenance staff will be conducted throughout the coming year.

New to the Bureau (FY 86 only) will be the hiring of a consultant to assist park staff in making the Heritage Parks completely accessible for all persons. This program will concentrate on individual staff needs and how to integrate the handicapped community into future park programming.

Lowell Heritage State Park will have the added responsibility for maintenance of the locks and canals, and Lawrence Heritage Park will be encouraging residents to grow and display cut flowers at weekly flower markets. These, along with weekly concerts, and tours, slides shows, lectures, festivals, crafts fairs, plus a special feature at Lawrence Heritage Park - a puppetry theatre - should make FY 86 another good year for the Heritage State Park System.





## APPENDIX

### RECREATION:

#### INTERPRETIVE PROGRAM ATTENDANCE

APPENDIX A

#### FACILITY ATTENDANCE

FORESTS AND PARK

APPENDIX B

HERITAGE PARKS

" "

RINKS

APPENDIX C

POOLS

APPENDIX D

BEACH AREAS

APPENDIX E

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SUMMARY OF REVENUE

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FORESTS AND PARKS

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APPENDIX J

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OAK LEAFTIER PREDICTION - 1985

APPENDIX O

GYPSY MOTH STATUS AND DEM POLICY

RECOMMENDATIONS

APPENDIX P

### FIRE CONTROL:

MONTHLY TOTALS OF INCIDENTS/ACREAGE  
AND DOLLAR LOSS

APPENDIX Q

DISTRICT YEARLY TOTALS OF INCIDENTS/  
ACRES AND DOLLAR LOSS

APPENDIX R

DISTRICT INCIDENTS BY CAUSE

APPENDIX S

DISTRICTS INCIDENTS BY SIZE

APPENDIX T

ACRES BURNED BY DISTRICT

APPENDIX U

ACREAGE BURNED BY CAUSE

APPENDIX V

ACRES BURNED BY FOREST TYPE

APPENDIX W

TOTAL INCIDENTS BY FOREST TYPES

APPENDIX X

INTERPRETIVE PROGRAM ATTENDANCE1985

<u>FACILITY</u>	<u># OF PROGRAMS</u>	<u># OF PARTICIPANTS</u>	<u>AVG.</u>
<u>REGION ONE</u>			
Boston Harbor Island S.P.			
Bumpkin Island	100	790	8
Gallops Island	59	493	8
Grape Island	100	1174	12
Great Brewster Island	15	183	12
Dighton Rock	Museum Visitors	800	n/a
Massasoit S.P.	93	888	10
Myles Standish S.F.	135	2576	19
Nickerson S.P.	165	3475	21
Shawme Crowell/ Scusset Beach S.R.	108	607	6
South Cape Beach/ Washburn Island S.P.	43	491	11
Wompatuck S.P.	75	650	9
Pilgrim Memorial	N/A	19,460	
<u>REGION TWO</u>			
Harold Parker S.F.	110	700	6
Salisbury Beach S.R.	59	1779	30
Plum Island S.R.	76	780	10
Walden Pond S.R.	233	2831	12
<u>REGION THREE</u>			
Douglas S.F.	125	1981	16
Otter River S.F.	126	1437	11
Wells S.P.	86	1187	14
<u>REGION FOUR</u>			
DAR S.F.	121	1940	16
Mohawk Trail S.F.	83	953	11
Holyoke Range/ Skinner S.P.	131	2926	22
<u>REGION FIVE</u>			
Mt. Greylock S.R.	48	616	13
Pittsfield S.F.	68	990	15
Savoy Mt. S.F.	105	1216	12
	<hr/> 2,264	<hr/> 50,923	<hr/> 13



1985 FISCAL YEAR  
ATTENDANCE RECORD

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
AMES NOWELL	-	15,789	12,991	2,798	15,789
ASHLAND	-	21,552	18,353	3,199	21,552
BEARTOWN	7,613	39,406	33,826	5,580	47,019
BLACKSTONE	-	-	-	-	-
BORDERLAND	-	55,890	55,890	-	55,890
BOSTON HARBOR ISLANDS	4,430	35,334	35,334	-	49,764
BRADLEY PALMER	-	67,775	59,347	8,428	67,775
BUFFUMVILLE	-	13,897	9,811	4,086	13,897
CALLAHAN, RAYMOND J.	-	27,807	27,807	-	27,807
CAMPBELL FALLS	-	3,108	3,108	-	3,108
CAPE COD RAIL TRAIL	-	131,954	131,954	-	131,954
CATAMOUNT	-	-	-	-	-
CHESTER - BLANFORD	461	5,588	4,842	746	6,049
CHICOPEE	-	84,723	43,205	41,518	84,723
CLARKSBURG	2,374	7,332	4,764	2,568	9,706
COCHITUATE	-	170,825	80,161	90,664	170,825
CONNECTICUT RIVER RAMP	-	-	-	-	-
CONWAY	-	-	-	-	-
COOKSON	-	2,636	2,636	-	2,636
D.A.R.	13,840	34,715	17,630	17,085	48,555
DEAN POND BRIMFIELD	1,637	13,038	5,549	7,489	14,675
DEMAREST LLOYD	-	39,516	12,990	26,526	39,516
DENNISON LAKE	32,540	82,009	66,592	15,417	114,549
DIGHTON ROCK	-	10,051	7,725	2,326	10,051

AREA	CAMPING	DAY-USE	NON-PAID	PAID	T
DOUGLAS	-	74,858	45,004	29,854	74
DUBUQUE	-	20,975	20,975	-	20
EAST MOUNTAIN	-	-	-	-	
ERVING	6,428	60,614	45,998	14,616	67
FED. WOMENS CLUB	2,491	12,431	12,292	139	14
F.G. HILLS	-	6,270	6,270	-	6
FREETOWN	-	30,205	23,081	7,124	30
GARDNER	-	7,737	4,716	3,021	7
GEORGETOWN-ROWLEY	-	-	-	-	
GRANVILLE	9,302	12,228	7,497	4,731	21
GREAT BROOK FARM-CARLISLE	-	35,920	35,920	-	35
HALIBUT POINT	-	21,912	21,912	-	21
HAMPTON PONDS	-	45,795	21,098	24,697	45
HAROLD PARKER	40,986	44,932	40,809	4,123	85
HAWK'S NEST	-	-	-	-	
H.O. COOK	-	-	-	-	
HOLLAND POND	-	17,006	11,434	5,572	17
HOLYOKE RANGE	-	40,950	40,950	-	40
HOPKINTON	-	128,897	61,705	67,192	128
LEOMINSTER	-	39,968	21,069	18,899	39
LOWELL-DRACUT	-	15,979	15,979	-	15
LUDLOW	-	-	-	-	
MARTHA'S VINEYARD	-	60,683	60,683	-	60
MASSASOIT	40,057	45,851	37,280	8,571	85
MOHAWK TRAIL	10,885	16,091	13,625	2,466	26

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
MONROE	-	13,374	13,374	-	13,374
MOORE	-	39,320	39,320	-	39,320
MT. EVERETT	-	40,929	40,929	-	40,929
MT. GRACE	-	15,702	14,674	1,028	15,702
MT. GREYLOCK	15,531	205,224	205,169	55	220,755
MT. SUGARLOAF	-	77,259	77,259	-	77,259
MT. WASHINGTON	1,979	98,470	98,470	-	100,449
MYLES STANDISH	100,854	180,132	142,524	37,608	280,986
NANTUCKET	-	-	-	-	-
NATURAL BRIDGE	-	1,220	1,220	-	1,220
NICKERSON	135,522	89,266	89,266	-	224,788
NORTHFIELD	-	-	-	-	-
OCTOBER MT.	8,208	30,269	30,113	156	38,477
OTIS	-	-	-	-	-
OTTER RIVER	17,894	38,480	32,576	5,904	56,374
PEARL HILL	4,656	16,285	7,149	9,136	20,941
PERU	-	-	-	-	-
PETERSHAM	-	-	-	-	-
PITTSFIELD	7,245	76,768	70,220	6,548	84,013
PLUM ISLAND	-	152,940	152,940	-	152,940
PURGATORY CHASM	-	125,338	125,338	-	125,338
QUINSIGAMOND-REGATTA	-	217,548	196,765	20,783	217,584
QUINSIGAMOND-LAKE PARK	-	67,714	52,940	14,774	67,714
RED BRIDGE	-	-	-	-	-
RICH, J. HARRY	-	-	-	-	-
ROBINSON	-	20,405	12,008	8,397	20,405



AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
RUTLAND	-	30,877	22,078	8,799	30,877
SANDISFIELD	-	11,294	5,270	6,024	11,294
SAVOY	11,359	27,198	24,933	2,265	38,557
SHAWME-CROWELL	59,656	7,489	6,524	965	67,163
SKINNER	-	96,465	96,465	-	96,465
SOUTH RIVER	-	-	-	-	-
SPENCER	-	16,545	8,918	7,627	16,545
STANDISH MONUMENT	-	29,643	29,643	-	29,643
STREETER	-	54,016	32,433	21,583	53,971
TACONIC FALLS	-	-	-	-	-
TOLLAND	26,132	68,480	51,280	17,200	94,612
TULLY RECREATION AREA	3,960	13,853	13,853	-	17,813
UPTON	-	15,030	15,030	-	15,030
WACHUSETT MOUNTAIN	-	262,900	262,900	-	262,900
* - SKI AREA	-	360,000	360,000	-	360,000
WAHCONAH FALLS	-	36,816	36,816	-	36,816
WALDEN POND	-	351,010	106,815	244,195	351,010
WARREN MANNING	-	3,149	2,152	997	3,149
WARWICK	-	-	-	-	-
WATSON	-	20,468	8,514	11,954	20,468
WEBB	-	57,265	57,265	-	57,265
WELLS	18,419	19,933	17,777	2,156	38,352
WENDELL	100	24,195	17,390	6,805	24,295
WEST LAKE	-	3,246	3,246	-	3,246
WHITEHALL	-	21,918	21,918	-	21,918

\* Privately operated

AREA	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
WILLARD BROOK	5,206	53,025	17,196	35,829	58,231
WILLOWDALE	-	28,188	28,188	-	28,188
WINDSOR	5,529	22,970	13,950	9,020	28,499
WOMPATUCK	30,527	337,046	337,046	-	367,573
TOTAL	625,821	5,081,909	4,182,666	899,243	5,707,703

HERITAGE PARKS	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
FALL RIVER	-	84,216	84,216	-	84,216
HOLYOKE	-	15,494	15,494	-	15,494
LAWRENCE	-	23,265	23,265	-	23,265
LOWELL	-	300,200	300,200	-	300,200
TOTAL		423,175	423,175		423,175



SKATING RINKS	DAY-USE	TOTAL
AUBURN	200,021	200,021
BROCKTON	108,164	108,164
FALL RIVER	143,803	143,803
FRANKLIN	167,162	167,162
GARDNER VETERANS	99,993	99,993
GREENFIELD	99,326	99,326
HAVERHILL	79,604	79,604
HOLYOKE	134,439	134,439
LOWELL	154,311	154,311
MARLBORO	215,170	215,170
NEW BEDFORD	133,723	133,723
NEWBURYPORT	148,479	148,479
NORTH ADAMS	65,638	65,638
PEABODY	190,977	190,977
PLYMOUTH	125,654	125,654
SPRINGFIELD	110,801	110,801
TAUNTON	97,141	97,141
WORCESTER	200,518	200,518
TOTAL	2,474,924	2,474,924

SWIMMING POOLS	DAY-USE	TOTAL
AGAWAM	20,947	20,947
ATTLEBORO	19,067	19,067
BROCKTON	29,641	29,641
CHICOPEE	14,003	14,003
CLINTON	35,962	35,962
FALL RIVER	28,047	28,047
FITCHBURG	18,112	18,112
HOLYOKE	8,120	8,120
LAWRENCE	28,888	28,888
LEOMINSTER	20,354	20,354
LOWELL	16,375	16,375
LUDLOW	15,953	15,953
MILFORD	27,422	27,422
SOUTHBRIDGE	17,899	17,899
SOUTH HADLEY	15,715	15,715
SPRINGFIELD	15,303	15,303
WESTFIELD	14,651	14,651
WORCESTER #1 (SHINE)	38,059	38,059
WORCESTER #2	39,168	39,168

TOTAL	395,686	395,686
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BEACH AREAS	CAMPING	DAY-USE	NON-PAID	PAID	TOTAL
FT. PHOENIX	-	60,587	52,614	7,973	60,587
HORSENECK	30,887	348,628	79,687	268,941	374,515
SALISBURY	193,442	1,975,959	1,884,350	91,609	2,169,401
SCUSSET	43,414	136,348	64,439	71,909	179,762
SOUTH CAPE	1,278	41,266	27,935	13,331	42,544
TOTAL	269,021	2,562,788	2,109,025	453,763	2,838,809

	CAMPING	DAY-USE	TOTAL
Total Attendance At All Facilities	894,842	10,938,482	11,833,324



## FY 1985 - CONSTRUCTION SUMMARY

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	GENERAL CONTRACTOR	CONTRACT AMOUNT	CONTRACT DATE	SCOPE OF WORK	FISCAL YEAR
I	Horseneck Beach State Reservation	110-83	Tilcon Massachusetts Inc.	\$ 25,485.	7/18/83	Paving Entrance Roads Horseneck Beach State Reservation	
I	Horseneck Beach State Reservation Gooseberry Point	118-83	Wallace Welding and Ormanental Iron Works	\$ 23,524.	11/21/84	Steel stairs & Slab cutting at Gooseberry Point, Horseneck Beach	
I	Borderland State Park	124-83	Mass Heating	\$ 7,132.	12/5/83	Boiler Renewal at Borderland State Park.	
I	Shawme-Crowell State Forest	112-83	Tilcon Massachusetts	\$ 8,610.	9/21/83	Roadway Entrance Paving at Shawme-Crowell	
I	Boston Harbor Island State Park Hewitts Cove	117-83	Doyle Chimney Roofing Co.	3,900.	7/27/83	Chimney Construction	
I	Boston Harbor Island State Park Hewitts Cove	113-83	Sacchetti Plumbing & Heating	17,490.	8/13/83	Refurbishing Heating System	
I	Fort Phoenix State Reservation		M.C. Souza & Son	5,000.	6/1/84	Beach Area Restoration, Fort Phoenix State Reservation	
I	Boston Harbor I.S.P. Hewitts Cove	115-84	Ricciardelli & Sons Inc.	\$2,950.00	8/19/83	Drywall Taping	

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	GENERAL CONTRACTOR	CONTRACT AMOUNT	CONTRACT DATE	SCOPE OF WORK
II	Walden Pond	142-84	R.H. White	9,296.	6/19/84	Sewerage Pumping Upgrade
II	Lawrence Visitor Center	156-84	Raymond Monsour	\$ 1,137,794.	5/31/84	Construction of the Visitor Center
II	Higgins Pool	136-84	Johnson Bros., Inc.	12,436.	4/21/84	Concrete Deck Repair
II	Lowell Heritage State Park	120,84	Pilgrim Construction	427,640.	3/2/84	Siphon Construction and Canal System Restoration and Renovation.
II	Lowell Heritage State Park	105-84	New England Construction and Management Inc.	198,000.	3/5/84	Architectural Alterations at the Mack Building.
II	Lowell Heritage State Park		Empire Engineering	1,800.		HVAC repair.
II	Bradley Palmer State Forest	116-84	Fairway Roofing and Sheetmetal Co.	10,000.	9/14/84	Roofing and Skylight repates.

REGION	FOREST/PARK RESERVATION	CONTRACT NUMBER	GENERAL CONTRACTOR	CONTRACT AMOUNT	CONTRACT DATE	SCOPE OF WORK	FISCAL YEAR
III	Mt. Wachusett State Reservation	154-84	The Henley-Lundgren Co.	59,996.	6/19/84	Road Construction	
V	Bascom Lodge Mt. Greylock State Reservation	88-82	J. Watson Co., Inc.	\$182,856	8/31/83	Rehabilitation of Bascom Lodge	

LAND ACQUISITION

<u>NUMBER OF PARCELS</u>	<u>AMOUNT OF ACREAGE</u>	<u>TOTAL COST OF PARCELS</u>
39 PARCELS	1,797.56 ACRES	\$2,343,915.00



## ACQUISITION &amp; CONSTRUCTION

FISCAL YEAR 1985

Land Acquisition - 7/1/84 to 6/30/85

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Cummingtön	Chesterfield Gorge	M. Stebbins Howes Etals	1/31/85	71 A	\$60,000.
Northbridge	Blackstone River S.P.	Lorraine G. Hanson	2/11/85	21.97 A	11,000.
North Adams & Clarksburg	Natural Bridge	Agnes A. Elder	2/7/85	17 A	176,000.
North Adams	Natural Bridge	Agnes A. Elder & Joyce E. Kelly	2/7/85	3.2 A	28,000.
Amherst, Hadley & Northampton	Rail Trail	Boston & Maine Corp. & Guilford Trans. Indus.	3/25/85	83.45 A (9.6 miles)	400,000.
Douglas	Douglas S.F.	Richard C. Simmons	4/19/85	84 A	100,800.
Windsor	Windsor S.F.	Ronald A. Hunter	5/1/85	100 A	69,000.
Conway	Conway S.F.	Jean Lee	6/7/85	60 A	20,500.
Conway	Conway S.F.	Commonwealth of Massachusetts	6/7/85	19 A	Exchange (Disposition)
Mount Washington	Mt. Washington S.F.	Helen H. Melius ET ALS	6/7/85	115 A	40,000.
Granby	Holyoke Range	Rouville & Agnes Gingras	6/21/85	1.12 A	175,000
Northbridge	Blackstone River S.P.	George Osterman	6/21/85	11.5 A	5,000.
Douglas	Douglas S.F.	Burton & Cecile Carter	6/21/85	31. A	14,800.

## FISCAL YEAR 1985

Land Acquisition - 7/1/84 to 6/30/85

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Holyoke	Holyoke Heritage S.P. Easement	Pioneer Valley Railroad Company Inc.	7/13/84	3.5 miles	Easement
Erving	Erving S.F.	Gerald B. Hobbs & Linda L. Hobbs	7/16/84	1.8 A	\$14,500.
Salisbury	Salisbury S.R.	Joseph P. Pulvino	8/1/84	7,500 S.F.	162,500.
Sturbridge	Wells S.P.	Walker Pond Corporation	8/3/84	53.4 A	112,500
Dalton	Appalachian Trail	Town of Dalton/ Mass. Electric/ W.J. Cowee	8/10/84	257.5 A	90,000.
Amherst	Holyoke Range	Hollis W. Moore	8/23/84	15.6 A	90,000.
Warwick/ Orange Royalston	Warwick S.F. - Orange S.F. & Royalston S.F.	Roy D. & Marjorie Wetmore	8/28/84	116. A	38,700.
Orange	Orange S.F.	Comm. of Mass.	8/28/84	59. A	Exchange (Dispositive)
Sutton	Purgatory Chasm S.P.	Leon T. Sochia III	8/28/84	16.5 A	18,000.
Granby	Holyoke Range	Charles J. Sullivan, Jr.	9/12/84	15. A	4,500.
Granby	Holyoke Range	Richard T. Bealieu & Mario A. Tonelli	9/12/84	8.5 A	3,400.
Amherst	Holyoke Range	Mary & Genevieve Miazga	9/12/84	31. A	70,000.
Douglas	Douglas S.F.	Angelo V. Vecchione	9/21/84	26. A	42,000.

## ACQUISITION &amp; CONSTRUCTION

FISCAL YEAR 1985

Land Acquisition - 7/1/84 to 6/30/85

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
Wendell	Wendell S.F.	Allyn W. Coombs, Inc.	10/4/84	18. A	\$ 7,200.
Granby	Holyoke Range	Gerard & Claire D. L'Heureux	10/4/84	60.5 A	25,000.
Huntington	Huntington S.F.	U.S.A. National Park Service	10/4/84	45. A	-----
Eastham	Cape Cod Rail Trail	Penn Central Corp.	10/11/84	33.5 A (2.8 miles)	80,000.
Middlefield	Middlefield S. F.	J. W. Kelly's Enterprises Inc.	11/16/84	108. A	30,000.
Blackstone	Franklin - Douglas Rail Trail	Design Ventures Inc. & Comm. of Mass.	11/26/84	-----	Agreement
North Adams	Appalachian Trail Easement & Restrictions	City of North Adams	12/13/84	5.62 A	7,500.
Douglas, Uxbridge Millville, Blackstone Bellingham & Franklin	Rail Trail	Penn. Central Corporation	12/21/84	320. A (19.5 miles)	304,015.
Worcester	Blackstone River S.P.	Halford W. Park, Jr. & Helen Park Haskell	12/31/84	6.36 A	Gift
Douglas	Douglas S.F.	Angelo V. Vecchione	1/3/85	8.16 A	Gift
Sandwich	Scusset Beach	Dept. of Environmental Quality Engineering	1/11/85	-----	Lease Amendment
Hopkinton	Hopkinton	Tordiglione, Acton & Ward	1/24/85	36.5 A	115,500.
Northbridge	Blackstone River S.P.	Ronald & Edward Renad	1/28/85	15.08 A	28,500.

FY 1985 SUMMARY OF REVENUE

AREA	DAY-USE	CAMPING	OTHER	TOTAL
BEACHES	490,995.25	512,182.01	20,840.10	1,024,017.36
FORESTS & PARKS	706,339.40	1,012,236.40	232,262.05	1,950,837.85
POOLS	72,132.35	-	2,548.96	74,681.31
RINKS	2,462,175.60	-	90,358.26	2,552,533.86
TOTAL	3,731,642.60	1,524,418.41	346,009.37	5,602,070.38



PARKS FY 1985

	PARKING	RECEIPTS	SEASON PASS	BUS	ADULT WALK-INS	HOUSE RENT	CHILDREN'S ROLL-TYPE	COTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUP	PAY PHONE	TOTALS
AMES NOWELL	2,523.00		180.00							16.60				2,719.60
ASHLAND	2,850.00		1,440.00	820.00					121.90					5,231.90
ASHMERE LAKE														900.00
BEARTOWN	4,068.00	5,306.00	960.00	220.00	2.50	726.00		900.00	5.50					11,288.00
BOKERLAND						2,184.00								2,184.00
BOSTON HARBOR ISLAND														2,355.50
BRADLEY PALMER	7,086.00		840.00		.50	2,625.00			2,355.50					12,035.50
BUFFUMVILLE	2,796.00		900.00	40.00	5.50				400.00			1,084.00		3,741.50
CARLISLE	4,417.00													7,222.00
CHESTER	1,890.00		120.00		71.25			2,005.00	800.00			365.00		2,446.25
CHICOPEE	19,200.00		4,700.00	40.00	75.00		25.20		301.55				3.53	24,345.28
CLARKSBURG	2,409.00	2,855.00	1,060.00	80.00					11.00	300.00				6,715.00
COCHITUATE	67,566.00		17,240.00	600.00	390.50				5,126.17		2,472.00			93,394.67
D.A.R.	12,777.00	20,961.15	4,980.00						631.15	43.20				39,392.50
DEAN POND (BRIMFIELD)	5,172.00	291.00	1,080.00	60.00	21.25				5.50	1,078.40				7,708.15
DEWAREST LLOYD	21,150.00		4,340.00	20.00					324.57					25,834.57
DIGHTON ROCK	976.00		660.00							3.00				1,639.00
DOUGLAS	24,600.00		4,460.00	160.00					316.50	264.25				29,800.75
ERVING	11,277.00	7,293.75	4,400.00	100.00	33.00				150.00	13.40				23,267.15
FEDERATED WOMEN'S														.00
FREETOWN	1,983.00		1,320.00			960.00				10.15				4,273.15
GRANVILLE	2,571.00	4,430.00	120.00											7,121.00
HAMPTON POND	19,329.00		3,760.00	20.00	195.75	2,518.50			301.99					26,125.24
HAROLD PARKER	8,718.00	73,053.00	480.00	60.00					15.00				215.48	82,541.48
HOLLAND POND	4,527.00		840.00						5.50					5,372.50
HOPKINTON	79,200.00		19,700.00	240.00					7,910.90	45.00		764.00		107,859.90
LAKE DENWILSON	5,850.00	43,510.00	1,980.00	20.00					75.40				.32	51,435.40
LEOMINSTER	9,042.00		3,120.00		62.00	546.00			1,000.00					13,770.32
MARTHA'S VINEYARD						648.00								648.00
MASSASOIT	6,126.00	62,884.00	1,200.00						188.77	128.64			77.16	70,604.57
MOHAWK TRAIL	2,676.00	23,467.00	280.00							240.00				26,663.00
MOORE						1,128.00								1,128.00
MT. GRACE	732.00		120.00											852.00
MT. GREYLOCK	138.00	6,899.00						21,135.00		11,209.83				39,381.83
MT. WASHINGTON		847.00												847.00
MYLES STANDISH	29,046.00	150,862.00	1,240.00	620.00		1,614.00		35,421.00	1,566.52	2,634.69			432.76	223,436.97
NATURAL BRIDGE	1,092.00				39.50									1,131.50
NICKERSON		288,484.00				1,110.00			505.00	233.00			1,915.03	292,247.03

PARKS FY 1985 CONT.

	PARKING	RECEIPTS	SEASON PASS	BUS	ADULT WALK-INS	HOUSE RENT	CHILDREN'S ROLL-TYPE	OTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUPS	PAYPHONE	TOTALS
OCTOBER MT.	339.00	18,874.00							55.75	122.40			72.13	19,285.13
OTTER RIVER	2,229.00	12,844.00	840.00							84.91			9.70	16,100.85
OTIS														84.91
PITTSFIELD	5,586.00	7,722.00	200.00						5.50				7.62	13,521.12
PURCATORY CHASM									176.75					176.75
QUINSIGAMOND LAKE	2,775.00	2,043.50			1,847.00				2,101.00	1,074.00				9,840.50
QUINSIGAMOND REGGATA	4,146.50				1,406.00					13.50				7,206.00
ROBINSON	7,638.00			60.00					57.85	41.30				9,797.15
RUTLAND	11,160.00			60.00					172.90					14,012.90
SANDSFIELD	3,962.00	16.00							5.50					6,143.50
SAVOY MTN.	2,181.00	16,116.00	520.00		.25				11.00	15.50				18,843.75
SHAWMEE CROMWELL	1,047.00	90,505.00				564.00			260.00	4,335.35			435.62	97,146.97
SKINNER						864.00			10.00					874.00
SOUTH CAPE BEACH	12,750.00		940.00						5.00					13,695.00
SPENCER	4,257.00		800.00		21.75	852.00								5,970.75
TOLLAND	10,170.00	35,564.00	1,180.00	40.00										46,914.00
TULLY REG. AREA	15.00	1,482.00												1,497.00
UPTON						570.00								570.00
WACHUSETTS MTN.	654.00								72,092.00	569.75				73,315.75
WALDEN POND	98,844.00		17,080.00	120.00					3,999.90	373.00			77.35	120,494.25
WARREN MANNING	732.00		120.00											852.00
WATSON POND	9,027.00		1,420.00	40.00	64.75		8.70		311.50	9.80				10,881.75
WELLS	669.00	27,762.00							5.50	156.05				28,592.55
WELLS STREETER	7,301.00		2,860.00		100.75				57.85					10,319.60
WENDALL	2,995.00		1,500.00		14.00				5.50			180.00		4,294.50
WILLARD BROOK	11,466.00	11,656.00	2,500.00			313.50			153.45					26,088.95
WILLARD BR. PEARL HILL	7,050.00	9,243.00	1,600.00											17,893.00
WINDSOR	4,116.00	2,871.00	1,100.00	80.00	.75				11.00	70.00				8,248.75
WOMPATUCK	324.00	84,395.00				2,885.75			5.00	50.00				87,659.75
OFFICE ACCOUNT			640.00							3,841.36				4,481.36
TOTALS =	572,820.50	1,012,236.40	123,240.00	3,500.00	4,352.00	20,108.75	33.90	38,326.00	120,000.87	29,732.58	2,472.00	2,393.00	3,246.70	1,932,462.70

	TRAILER	LAUNDRY- MAT	SEASON PASS	UNCLAIMED REFUND CHECKS	FEES	MISC.	TOTAL
WALDEN BREEZES	17,415.00	960.15					18,375.15
TOTALS =	17,415.00	960.15					18,375.15

RINKS FY 1985

	CHILDREN	GROUP	ADULTS	SPECIAL EVENTS	RENTALS	SPECTATOR WALK-INS	LOCKERS	CONCESSION	PAY PHONE	MISC.	JOGGING	TOTALS
AUBURN	4,716.00		8,685.00	1,652.50	134,240.00		895.25	3,666.67	59.11			153,914.53
BROCKTON	5,426.50		7,574.00	4,057.50	140,448.25		880.75	6,716.00	50.28	25.00		165,178.28
FALL RIVER	4,370.00		6,744.00	4,536.75	131,722.50		1,121.00	13,340.00	90.45			161,924.70
FRANKLIN	7,411.00		7,734.00	13,129.00	161,479.50		629.25		110.38	30.42	47.50	190,571.05
GARDNER	3,151.50		3,678.00	2,705.25	97,454.50	11.50	353.25	2,325.00	31.06	304.60		110,014.66
GREENFIELD	3,893.00		2,781.00	1,150.00	76,452.50		165.50	5,000.00	27.76			89,469.76
HAVERHILL	3,238.50		2,837.00	1,540.50	126,230.00		395.25		32.19			134,273.44
HOLYOKE	2,397.00		3,103.00	2,993.50	111,577.50		301.25	4,313.06	36.70			124,722.01
LOWELL	4,558.50		8,077.00	3,844.50	166,605.00		1,152.50	7,133.34	45.65			191,416.49
MARLBORO	4,094.00		5,840.00	3,380.50	114,434.00		471.48	3,000.00	27.23	27.55		131,274.76
NEW BEDFORD	3,009.00		5,646.00	8,152.50	121,957.50		689.13		201.72			139,655.85
NEWBURYPORT	5,873.50		5,253.00	11,003.00	140,550.00	15.00	500.16	12,101.00	58.88		15.00	175,369.54
NORTH ADAMS	2,187.50		2,755.00	1,783.00	51,220.00		179.75	3,581.00	4.32			61,710.57
PEABODY	4,989.00		7,207.00	6,800.00	144,640.00		544.00		47.06			164,227.06
PLYMOUTH	5,016.50		4,874.00	3,609.50	122,915.00		749.00	8,016.00	25.06	194.14		145,399.20
SPRINGFIELD	2,794.00		5,626.00	779.50	116,170.00		413.25	3,600.00	35.89			129,418.64
TAUNTON	2,483.00		5,683.00	4,590.50	132,778.00	699.10		6,576.00	58.16			152,867.76
WORCESTER	6,263.00		7,678.00	1,324.50	115,250.00	584.25			25.81			131,125.56
TOTALS -	75,871.50		101,775.00	77,032.50	2,206,124.25	1,309.85	9,440.77	79,368.07	967.71	581.71	62.50	2,552,533.86

## POOLS FY 1985

	CHILDREN	ADULTS	PASSES	LOCKERS	PAY PHONE	CONCESSION	MISC.	TOTALS
AGAWAM	2,372.25	1,485.50				233.55		4,091.30
ATTLEBORO	2,709.00	2,170.00				- 200.00		4,679.00
BROCKTON	3,859.25	2,869.50					31.00	6,759.75
CHICOPEE	2,172.50	878.50				.50		3,056.50
CLINTON	2,806.00	921.50				121.70		3,849.40
FALL RIVER	4,861.50	813.50				100.00		5,775.00
FITCHBURG	2,106.00	564.50				151.75		2,822.25
HOLYOKE	1,161.50	511.00				176.99		1,849.49
LAWRENCE	4,012.75	1,051.00				7.50		5,071.25
LEOMINSTER	2,077.50	472.00				121.90		2,671.40
LOWELL	3,752.25	576.50						4,328.75
LUDLOW	1,804.00	465.00				75.10		2,344.10
MILFORD	3,381.10	1,594.00						4,975.10
SOUTHBRIIDGE	2,504.00	381.50				5.50		2,891.00
SOUTH HADLEY	1,363.75	989.50				5.50		2,358.75
SPRINGFIELD	1,550.00	179.50				5.50		1,735.00
WESTFIELD	2,490.25	934.00				210.60		3,634.85
WORCESTER #1	3,545.50	1,508.00			7.86	400.00		5,461.36
WORCESTER #2	3,780.25	1,458.00			16.81	1,002.00	70.00	6,327.06
TOTALS -	52,309.35	19,823.00			24.67	2,423.29	101.00	74,681.31



FEACHES FY 1985

	<u>PARKING</u>	<u>RECEIPTS</u>	<u>WALK-INS</u>	<u>SEASON PASS</u>	<u>CONCESSION</u>	<u>LOCKERS</u>	<u>PAYPHONE</u>	<u>REFUND CHECK</u>	<u>MISC.</u>	<u>BUS</u>	<u>TOTALS</u>
FT. PHOENIX	6,831.00			4,600.00	231.00		11.09				11,673.09
HORSENECK	257,607.00	54,740.00	20.25	43,740.00	372.88	25.90	119.84		92.00	520.00	357,237.87
SALISBURY	97,150.00	325,715.00		18,380.00	12,710.50		1,493.02	18.00	100.00	160.00	455,726.52
SCUSSET	55,967.00	131,727.01		5,920.00	5,307.00		347.87		11.00	100.00	199,379.88
TOTAL -	417,555.00	512,182.01	20.25	72,640.00	18,621.38	25.90	1,971.82	18.00	203.00	780.00	1,024,017.36

1

BUDGET 2120-0300FY 1985

<u>SUBSIDIARY ACCOUNTS</u>	<u>DOLLARS</u>
01 Salaries Permenant Positions	\$2,530,896
02 Salaries Other	9,582,122
03 Services Non-Employees	77,000
04 Food for Persons	0
05 Clothing	30,700
06 Housekeeping Supplies and Expenses	54,000
07 Laboratory and Medical Supplies and Expenses	72,000
08 Heating and Plant Operation	1,789,430
09 Farm and Grounds	25,500
10 Travel and Automotive Expenses	248,136
11 Advertising and Printing	30,000
12 Maintainance - Repairs, Replacements and Alterations	675,000
13 Special Supplies and Expenses	71,126
14 Office and Administrative Expenses	11,000
15 Equipment	165,320
16 Rentals	73,000
TOTAL =	<u>\$15,435,230</u>

## FACILITY OPERATING COST

FORESTS AND PARKS		FISCAL YEAR 19 85						
FACILITY	ACRES	NUMBER OF PERSONNEL. YR. RND.	ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	TOTAL OPERATING COSTS
Ames-Nowell	600	3	15,789	2,703.00	2,719.60	3,677.16	60,195.05	63,872.21
Ashland	470	2	21,552	5,110.00	5,231.90	345.00	52,518.70	52,863.70
Beartown	10930	2	47,019	10,556.50	11,288.00	7,603.52	64,409.65	72,013.17
Blackstone R.						2,380.64	19,394.29	21,774.93
Borderland	1250	5	55,890	-	2,184.00	20,438.12	80,036.99	100,475.11
Bull	195		49,764	-	2,355.50	78,198.84	110,974.02	189,172.86
Bradley Palmer	833	4	67,775	9,010.00	12,035.50	23,030.59	124,738.91	147,769.50
Brimfield	4033	2	14,675	6,624.45	7,708.15	2,614.09	32,614.00	35,228.09
Bristol Blake	200					see Region 1		
Buffumville	400	0	13,897	3,741.50	3,741.50	1,444.05	35,864.09	37,308.14
Callahan	425	3	27,807				36,500.82	36,500.82
Campbell's Falls	4		3,108			see Mt. Wash		
Carroll & Great Brook	925	4	35,920	4,417.00	7,222.00	6,676.73	32,759.17	39,435.90
Cape Cod Rail Trail	21.8m		131,954			-	10,791.85	10,791.85
Catamount	1125					see Mohawk		
Chester-Blandf.	2038	1	6,049			3,594.50	34,829.00	38,423.50
Chilcopee	574	5	84,723	24,040.20	24,345.28	7,129.52	126,944.86	134,074.38
Clarksburg	3250	1	9,706	6,404.00	6,715.00	3,323.93	44,895.76	48,219.69
Cochituate	1126	2	170,825	85,796.50	93,394.67	24,977.53	97,365.62	122,343.15
Conn. River Ramp	-					see Robinson		
Conway	2025					see DAR		

FISCAL YEAR 1985

FACILITY	ACRES	NUMBER OF PERSONNEL		ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	TOTAL OPERATING COSTS
DAR	1,517	3	11	48,555	38,718.15	39,392.50	10,288.11	87,561.20	97,849.31
Demerest Lloyd	222	0	9	39,516	25,510.00	25,834.57	1,672.01	27,735.09	29,407.10
Dighton Rock	85	1	5	10,051	1,636.00	1,639.00	3,600.13	25,232.79	28,832.92
Douglas	3,901.16	1	10	74,858	29,220.00	29,800.75	11,231.07	104,894.09	116,125.16
Dubuque	7,822.00	1	2	20,975			5,455.95	24,503.00	29,958.95
East Mt.	375.00						See Beartown		
Erving	4,480.8	2	9	67,042	23,103.75	23,267.15	10,358.08	86,064.64	96,422.72
Fed. Woman	586	0	3	14,922			1,344.78	14,732.94	16,077.72
Fox & FG Hills	810			6,270					
Freetown	5,441	3	3	30,205	3,303.00	4,273.15	11,818.95	74,371.45	86,190.40
Gardner	29	0	4	7,737					
Georgetown	1,112						See B. Palmer		
Granville	2,247	2	5	21,530	7,121.00	7,121.00	4,708.39	59,073.00	63,781.39
Halibut Point	54			21,912			2,452.40	7,144.41	9,596.81
Hampton Pond	184	2	18	45,795	23,304.75	26,125.24	8,558.74	93,039.79	101,598.53
Harold Parker	3,000	6	18	85,918	82,311.00	82,541.48	22,126.22	152,851.27	174,977.49
Hawknest	218						See Nickerson		
HO Cook	1,620						See Mohawk		
Holand Pond	1,000	0	12	17,006	5,367.00	5,372.50	2,254.64	60,537.43	62,792.07
Holyoke Range	2,406.02	5	0	40,950			3,019.28	28,466.00	31,485.28
Hopkinton	996.5	5	24	128,897	99,904.00	107,859.90	41,589.31	147,576.85	189,166.16



FISCAL YEAR 19 85

FACILITY	ACRES	NUMBER OF PERSONNEL		ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	TOTAL OPERATING COSTS
		YR.	RND.	SEASONAL					
Lake Dennison	4,390	0	19	114,549	51,360.00	51,435.40	8,521.81	86,836.82	95,358.63
Leominster	4,265	1	8	39,968	12,224.00	13,770.32	3,318.77	52,399.35	55,718.12
Lowell Dracut	1,000	1	0	15,979			1,228.47		1,228.47
Ludlow	29						See Chicopee		
Martha's Vineyd.	4,000	1	1	60,683		648.00	3,994.55	32,152.49	36,147.04
Massasoit	1,500	6	15	85,908	70,210.00	70,604.57			
Middlefield	1,957								
Mohawk Trail	6,457	2	9	26,976	26,423.00	26,633.00	7,972.90	82,269.00	90,241.90
Montroe	4,321	0	2	13,374			10,497.31	44,570.00	55,067.31
Moore	324	3	0	39,320		1,128.00	5,934.06	45,714.75	51,648.81
Mt. Everett	1,310			40,929				966.96	966.96
Mt. Grace	1,689	1	2	15,702	852.00	852.00	1,330.28	35,903.00	37,233.28
Mt. Greylock	10,327	5	9	220,775	7,037.00	39,381.83	24,480.30	117,377.53	141,857.83
Mt. Washington	3,222	2	3	100,449	847.00	847.00			
Myles Standish	14,622	9	47	280,986	181,768.00	223,436.97			409,850.78
Nantucket	137								
Natural Bridge	37.20	3	2	1,220	1,131.50	1,131.50	2,881.92	12,795.55	15,677.47
Nickerson	1,779	5	23	224,788	288,484.00				
Northfield	2,223						See Mt. Grace		
October Mt.	15,711	1	4	38,447	19,213.00	19,285.13	7,202.65	48,365.61	55,568.26
Otis Res.	3,861					84.91	See Tolland		

FISCAL YEAR 1985

FACILITY	ACRES	NUMBER OF PERSONNEL		ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	TOTAL OPERATING COSTS
Otter River	1,220	4	9	56,734	15,913.00	16,100.85	15,060.76	59,123.20	74,183.96
Pearl Hill	945	0	10	20,941	17,893.00	17,893.00	246.00	40,011.39	40,257.39
Peru (Ashmere Lake)	3,150						See Pittsfield		
Petersham	200						See Otter River		
Pilgrim Mem.	7	0	6				4,216.76	26,851.48	31,068.24
Pittsfield	9,695			84,013	13,508.00	13,521.12	10,978.05	91,098.54	102,076.59
Plum Island	73			152,940			648.44	17,189.73	17,838.17
Purgatory Ch	203.5	3	2	125,338		176.75	2,525.70	54,549.41	57,075.11
Quinsigamond									
Lake Park	25	0	9	67,714	6,665.50	9,840.50	6,457.17	56,877.77	63,334.94
Regotta Pt.	15	2	12	217,584		7,206.00	10,050.42	73,196.08	83,246.50
Red Bridge	42						See Chicopee		
Robinson	828	3	8	20,405	9,698.00	9,797.15	7,594.66	76,158.00	83,752.66
Rutland	1,920	2	13	30,877	13,840.00	14,012.90	11,310.05	71,343.71	82,653.76
Sandisfield	7,783	1	3	11,294	6,138.00	6,143.50			
Savoy	10,500	2	11	38,557	18,817.25	18,843.75			
Shaume Crowell	2,766	4	17	67,163	91,552.00	97,146.97			
Skinner Mt.	390	0	9	96,465		874.00	4,712.89	92,667.00	97,379.89
South Mt.	5						23,308.21	130,110.38	153,418.59
South Rv.	500								
Spencer	1,048	2	3	16,545	5,118.75	5,970.75	5,970.99	48,823.95	54,794.94
TOTAL									

FISCAL YEAR 19 85

FACILITY	ACRES	NUMBER OF PERSONNEL		ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	TOTAL OPERATING COSTS
Standish Mon.	29	1		29,643			218.85	2,734.98	2,953.83
Streeter	1,000	0	8	53,971	10,261.75	10,319.60	2,104.99	39,769.37	41,874.36
Sugarloaf Mt.	532	0	2	77,259			1,215.61	27,552.00	28,767.61
Taconic Trail	930						See Mt. Greylock		
Tolland	8,000	3	10	94,612	46,914.00	46,914.00			
Tully Res	1,150	0	3	17,813	1,497.00	1,497.00	2,343.18	26,793.80	29,136.98
Upton	2,660	1	0	15,030		570.00	3,785.71	6,500.33	10,286.04
Wachusett Mt.	1,975	4	15	292,900	654.00	73,315.75	19,231.38	123,983.20	143,214.58
Wahconah Falls	53			36,816			32.22	5,318.66	5,350.88
Walden Pond	300	7	27	351,010	116,044.00	120,494.25	20,967.83	170,363.04	191,330.87
Warren Manning	380	0	2	3,149	852.00	852.00	306.88	6,289.38	6,596.26
Warwick	7,216	4	0				9,703.78	70,762.00	80,465.78
Watson Pond	10	1	6	20,468	10,560.45	10,881.75	3,239.45	30,066.90	33,306.35
Webb	30			57,265			4,220.68	20,319.12	24,539.80
Wells	1,134.4	2	9	38,352	28,431.00	28,592.55	10,776.98	66,349.02	77,126.00
Wendell	7,711	2	5	24,295	4,289.00	4,294.50	3,586.82	61,646.00	65,232.82
West Lake	See Sandisfield			3,246			See Sandisfield		
Whitehall	877			21,918			See Hopkinton		
Willard Brook	4,960	5	14	58,231	25,622.00	26,088.95	18,092.46	134,770.75	152,863.21
Willowdale	2,400	2	0	28,188			See B. Palmer		
Windsor	1,726	1	7	28,499	8,167.75	8,248.75	3,348.83	33,689.35	37,038.18

## FISCAL YEAR 1985

[illegible]



[illegible]

## FISCAL YEAR 1985

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POOLS			FISCAL YEAR 1985					TOTAL	
FACILITY	ACRES	NUMBER OF PERSONNEL		ATTENDANCE	REVENUES FROM FEES	TOTAL REVENUES	MAINTENANCE COSTS	PERSONNEL COSTS	OPERATING COSTS
		YR. RND.	SEASONAL						
AGAWAM	2.1	0	19	20,947	3857.75	4091.30	3560.31	47778.95	51339.26
ATTLEBORO	3.1	0	15	19,067	4879.00	4679.00	3520.33	46834.20	50,354.53
BROCKTON	1.2	0	16	29,641	6728.75	6759.75	3828.73	50941.87	59770.60
CHICOPEE	2.9	0	17	14,003	3051.00	3056.50	4165.71	47500.79	51666.50
CLINTON	1.8	0	19	35,962	3727.50	3849.40	7023.51	51483.84	58507.35
FALL RIVER	1.9	0	19	28,047	5675.00	5775.00	6129.43	48,296.54	54,425.97
FITCHBURG	1.5	0	19	18,112	2670.50	2822.25	8124.96	50010.60	58135.56
HOLYOKE	1.6	0	17	8,120	1672.50	1849.49	4925.29	48124.86	53050.15
LAWRENCE	3.0	0	23	28,888	5063.75	5071.25	10,536..22	50,062.85	60,599.07
LEOMINISTER	5.2	0	20	20,354	2549.50	2671.00	10158.11	48666.38	58824.49
LOWELL	1.9	0	23	16,375	4328.75	4328.75	87,568.34	152,306.14	239,874.48
LUDLOW	.8	0	18	15,953	2269.00	2344.10	4081.40	42181.33	46262.73
MILFORD	3.0	0	20	27,422	4975.10	4975.00	11442.72	5047.22	61849.94
SOUTHBRIDGE	5.3	0	18	17,899	2885.50	2891.00	8369.96	45041.47	53411.43
SOUTH HADLEY	1.0	0	18	15,715	2353.25	2358.75	5659.89	43742.72	49402.61
SPRINGFIELD	3.2	0	19	15,303	1729.50	1735.00	7583.68	46653.00	54326.68
WESTFIELD	1.6	0	17	14,651	3424.00	3634.85	4733.94	43512.77	48246.71
WORCESTER # 1	1.3	0	23	38,059	5053.50	5461.36	10462.33	62996.95	73459.28
WORCESTER # 2	2.0	0	22	39,168	5238.25	6327.06	9862.18	62494.07	72356.25



## FISCAL YEAR 1985

**TOTAL.**





## FISCAL YEAR 19 85

## IV.1.1.2.



Commonwealth of Massachusetts  
Executive Office of Environmental Affairs  
Department of Environmental Management

Oak Leaf-tier Prediction - 1985

100 Cambridge Street  
Boston  
Massachusetts  
02202

Division of  
Forests & Parks

The Counties of Bristol and Norfolk will exhibit severe red, black and scarlet oak defoliation during the next few weeks in certain areas. Unless careful observations are made this defoliation can mistakenly be attributed to the gypsy moth. Close examination of the area will reveal, however, that the white oak species remain unaffected whereas the other oak will show varying degrees of defoliation.

The problem can be related directly to a complex of leaf-tier and leafrollers, the majority of which are the leaf-tier, Croesia semipurpurana. Enclosed for your information is a U. S. Forest Service leaflet describing the species.

The oak leaf-tier is a species native to the Northeast and occasionally breaks out into epidemic proportions. Beginning in the late 70's and extending through 1983 a severe outbreak was experienced in Eastern Franklin County. During that period of time data taken from a series of plots showed an average loss of 29% of the red oak through mortality.

An aerial survey conducted in June of 1984 revealed a total of 69,363 acres of noticeable defoliation (see enclosed map) in Southeastern Massachusetts. Subsequent sampling in suspected areas indicate heavy defoliation can be expected in 1985.

The purpose of this communication is to alert you to this fact. Generally, oak leaf-tier defoliation precedes that of the gypsy moth but, nevertheless, can be confused with it. If you are in doubt contact District Supervisor, Joseph Lokitus, at the Foxboro State Forest - telephone: 543-5850. He can assist you.

Any control effort undertaken during this current year would be ineffective due to the relatively short period where the insect would be vulnerable to an insecticide and that period has passed. The area will be carefully monitored by the Bureau of Insect Pest Control, however, for possible State action in 1986.

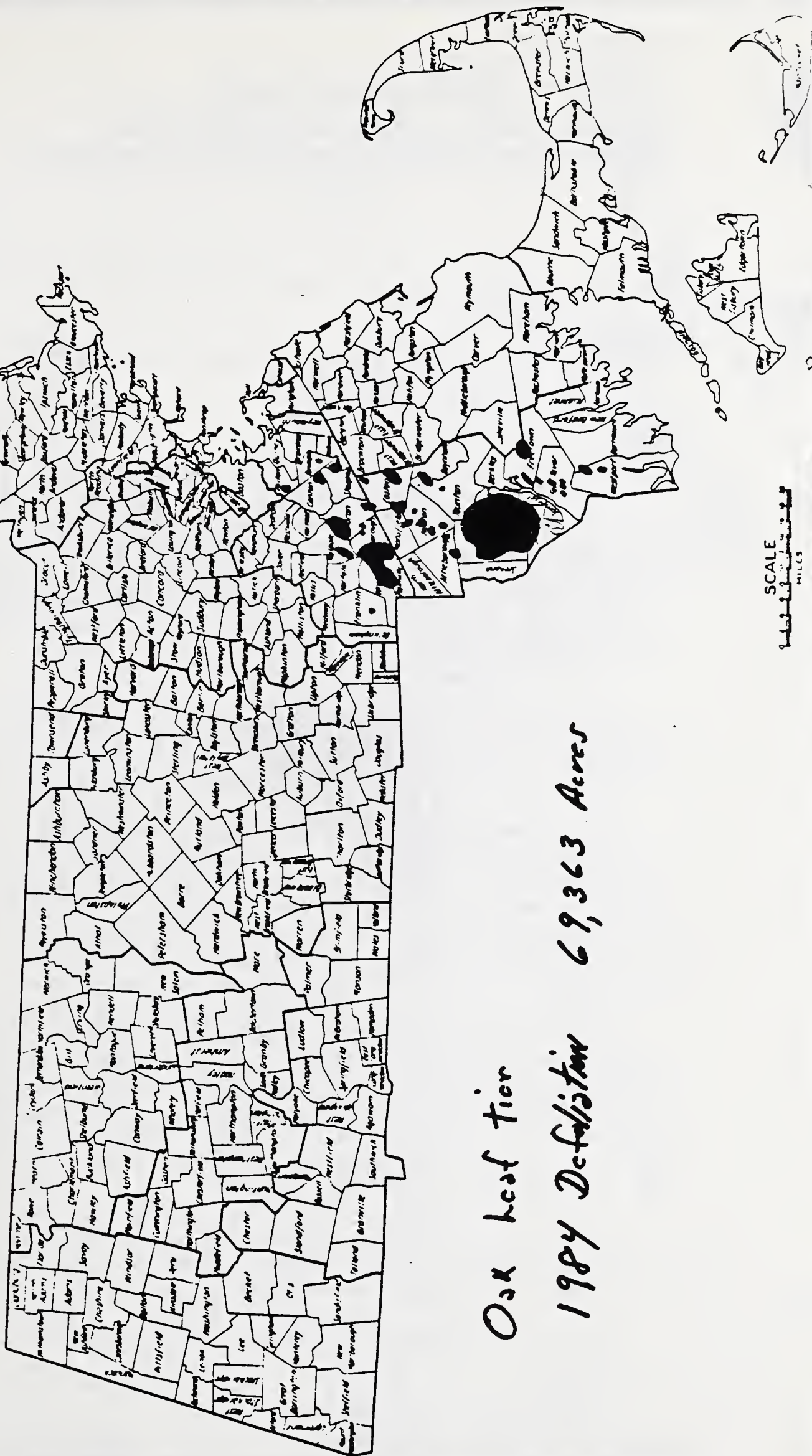
Charles S. Hood, Chief  
Bureau of Insect Pest Control

Gilbert A. Bliss  
Director



# MASSACHUSETTS

CITY AND TOWN LINES







Commonwealth of Massachusetts  
Executive Office of Environmental Affairs  
Department of Environmental Management

NOTICE

TO: Mayors and Boards of Selectmen, All Massachusetts Communities

SUBJECT: Gypsy Moth Status-1985 and Department of Environmental Policy Recommendations

DATE: March 19, 1985

100 Cambridge Street  
Boston  
Massachusetts  
02202

Office of the  
Commissioner

Ground survey work conducted by Department personnel indicates that certain areas of the Commonwealth should expect considerable gypsy moth activity during the coming spring and early summer. Specifically, two major areas, Southeast Worcester County extending into Southern Middlesex County and Barnstable County including parts of all communities on the Cape will bear the brunt of the gypsy moth defoliation in 1985.

At this time tree officials in all communities affected have been alerted to the extent and severity of the gypsy moth within their boundaries. With this information in hand the local decision must then be made as to whether a control effort is wanted or warranted.

If a community decides that a control program is to be conducted the decision must then be made as to the insecticide to be used. This Department is continuing in its effort to persuade communities to strongly consider the use of the biological, *Bacillus thuringiensis*, as the control agent to be employed. Proper timing and application will give satisfactory control of the gypsy moth while at the same time will create little or no impact upon the environment as a whole.

A Supplemental Budget request has been introduced in the present Legislative session, the main purpose of which is to establish a fund to help communities to defray the cost of gypsy moth control. If favorably accepted by the Legislature a program designed to reimburse communities for up to 50% of the cost of the control efforts will be put into operation. It will, however, be restricted to those communities using *Bacillus thuringiensis*.

Bureau of Insect Pest Control personnel continue to be available to help you and your local superintendent of insect pest control resolve any technical problems concerning the gypsy moth which may confront you.

Michael S. Dukakis  
Governor

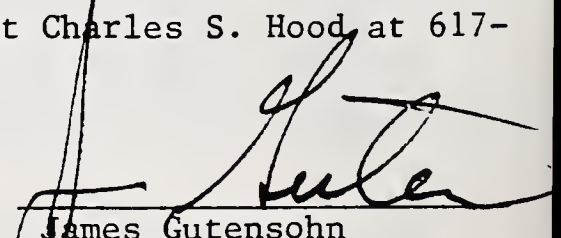
James S. Hoyt  
Secretary

James Gutensohn  
Commissioner

For further information please contact Charles S. Hood at 617-727-3184.

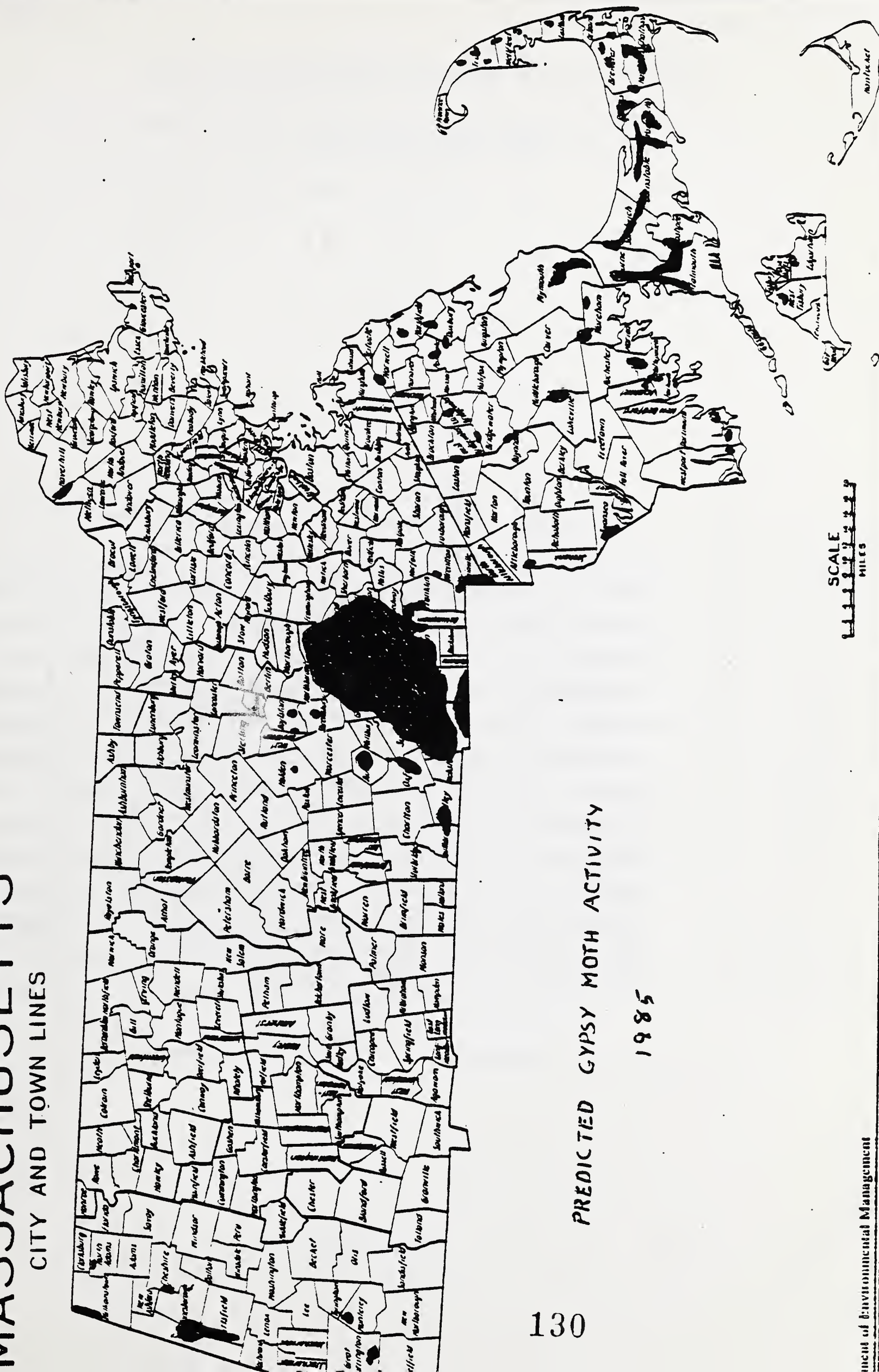
  
Gilbert A. Bliss

Director of Forests and Parks

  
James Gutensohn  
Commissioner of Environmental  
Management

# MASSACHUSETTS

CITY AND TOWN LINES



PREDICTED GYPSY MOTHS ACTIVITY

1985



## Monthly Totals of Incidents/Acreage and Dollar Loss

June 1984 - May 1985

Month	No. Fires	Acres	Cost
June	239	102.85	15,069.00
July	189	74.90	11,214.00
August	236	125.85	22,175.00
September	491	358.70	46,435.00
October	1,007	2,351.35	263,552.51
November	357	274.75	20,621.50
December	49	19.25	3,795.50
January	39	8.75	1,677.32
February	247	144.45	12,882.85
March	2,615	4,399.40	232,528.03
April	2,719	4,382.35	482,573.28
May	852	2,423.60	96,147.60
Total	9,040	14,666.20	1,208,671.59

## District Yearly Totals of Incidents/Acres and Dollar Loss

June 1984 - May 1985

District	No. Fires	Acres	Cost
1	392	167.75	59,550.00
2	832	447.95	37,677.00
3	923	1,023.90	176,630.45
4	1,001	1,523.00	99,910.56
5	937	1,855.00	51,604.00
6	839	1,582 -	79,989.00
7	403	778 -	46,777.70
8	920	576.60	116,627.00
9	280	466.10	32,434.67
10	558	456.35	40,302.48
11	1,052	1,741.55	181,377.53
12	363	2,535 -	117,127.00
14	540	1,513	168,346.20
Total	9,040	14,666.20	1,208,353.59

Damage - \$789,034.23 ( all catagories - all districts )



## District Incidents by Cause

June 1984 - May 1985

Dist.	Light	Camper	Smoker	Debris	Incen- Diary	Equip. Use	R.R.	Child- ren	Misc.
1	-	14	54	110	71	27	4	93	19
2	-	13	24	64	205	10	3	231	282
3	-	25	50	143	317	20	1	185	182
4	-	67	22	249	378	8	36	223	18
5	-	11	201	259	229	-	5	190	42
6	-	3	7	139	28	6	1	493	162
7	-	11	23	59	118	4	9	168	11
8	1	21	73	227	109	21	69	291	108
9	4	31	22	85	32	17	51	36	2
10	7	53	50	152	118	21	12	140	5
11	1	66	76	265	90	25	37	471	21
12	-	3	2	65	251	10	23	-	9
14	-	5	50	100	61	4	5	286	29
Total	13	323	654	1,917	2,007	173	256	2,807	890

## District Incidents By Size

June 1984 - May 1985

District	A	B	C	D	E	Total
1	339	52	1	-	-	392
2	677	150	5	-	-	832
3	427	480	16	-	-	923
4	501	480	20	-	-	1,001
5	707	195	30	-	5	937
6	270	550	18	-	1	839
7	192	196	15	-	-	403
8	642	273	5	-	-	920
9	195	78	5	2	-	280
10	340	216	2	-	-	558
11	655	366	28	3	-	1,052
12	106	248	5	5	1	363
14	229	284	24	2	1	540
Total	5,280	3,566	174	12	8	9,040

"A" Fire - .25 Acres or less  
 "B" Fire - .26 " to 9.9  
 "C" Fire = 10. " to 99.  
 "D" Fire = 100 " to 299.  
 "E" Fire = 300 " to 999  
 "F" Fire = 1,000 " to 4,999  
 "G" Fire = 5,000 " or over

## District Incidents by Cause

June 1984 - May 1985

Dist.	Light	Camper	Smoker	Debris	Incen- Diary	Equip. Use	R.R.	Chila- ren	Misc.	To
1	-	14	54	110	71	27	4	93	19	39
2	-	13	24	64	205	10	3	231	282	83
3	-	25	50	143	317	20	1	185	182	92
4	-	67	22	249	378	8	36	223	18	1,0
5	-	11	201	259	229	-	5	190	42	9
6	-	3	7	139	28	6	1	493	162	8
7	-	11	23	59	118	4	9	168	11	4
8	1	21	73	227	109	21	69	291	108	9
9	4	31	22	85	32	17	51	36	2	2
10	7	53	50	152	118	21	12	140	5	9
11	1	66	76	265	90	25	37	471	21	1,0
12	-	3	2	65	251	10	23	-	9	
14	-	5	50	100	61	4	5	286	29	
Total	13	323	654	1,917	2,007	173	256	2,807	890	9,0

## District Incidents By Size

June 1984 - May 1985

District	A	B	C	D	E	Total
1	339	52	1	-	-	392
2	677	150	5	-	-	832
3	427	480	16	-	-	923
4	501	480	20	-	-	1,001
5	707	195	30	-	5	937
6	270	550	18	-	1	839
7	192	196	15	-	-	403
8	642	273	5	-	-	920
9	195	78	5	2	-	280
10	340	216	2	-	-	558
11	655	366	28	3	-	1,052
12	106	245	5	5	1	363
14	229	284	24	2	1	540
Total	5,280	3,566	174	12	8	9,040

"A" Fire - .25 Acres or less  
 "B" Fire - .26 " to 9.9  
 "C" Fire = 10. " to 99.  
 "D" Fire = 100 " to 299.  
 "E" Fire = 300 " to 999  
 "F" Fire = 1,000 " to 4,999  
 "G" Fire = 5,000 " or over



## Acres Burned By District

June 1984 - May 1985

District	A	B	C	D	E	F
1	84.75	68 -	15 -	-	-	167.
2	148.95	223 -	76 -	-	-	447.
3	106.65	620.25	297 -	-	-	1,024.
4	125.25	769.75	628 -	-	-	1,523.
5	176.75	423.25	755 -	-	500 -	1,855.
6	67.50	899.50	315 -	-	300 -	1,512.
7	48. -	338 -	392 -	-	-	778.
8	104.85	391.75	80 -	-	-	576.
9	30.60	125.50	110 -	200	-	466.
10	76.60	339.75	40 -	-	-	456.
11	113.15	585.40	683 -	360 -	-	1,738.
12	26.50	329.50	129 -	-	2,050	2,509.
13	57.25	475.75	380 -	250 -	350 -	1,513.
Total	1,166.80	5,589.40	3,900 -	810 -	3,200 -	14,668.

### Acreage Burned By Cause

June 1984 - May 1985

[illegible]

## Acres Burned By Forest Type

June 1984 - May 1985

District	Comm. Forest	Non - Comm. Forest	Nonforested Watershed	Non - Forest	Total
1	-	167.75	-	-	167.75
2	.25	429.05	-	18.65	447.95
3	204.50	182.25	.75	636.40	1,023.90
4	849.00	357.00	5.00	312.00	1,523.00
5	245.25	1,178.50	22.00	409.25	1,855.00
6	3.25	1,536.00	-	42.75	1,582.00
7	673.75	23.25	-	81.00	778.00
8	215.20	198.10	16.25	147.05	576.60
9	333.20	130.90	-	2.00	466.10
10	194.40	151.45	7.60	102.90	456.35
11	1,209.85	381.80	-	149.90	1,741.55
12	2,196.75	249.25	1.50	87.50	2,535.00
14	51.00	1,211.00	64.75	186.25	1,513.00
Total	6,176.40	6,196.30	117.85	2,175.65	14,666.20

### Total Incidents By Forest Types

June 1984 - May 1985

[illegible]



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CHARLESTOWN, MASS





